ENGINEERING NEWS-RECORD

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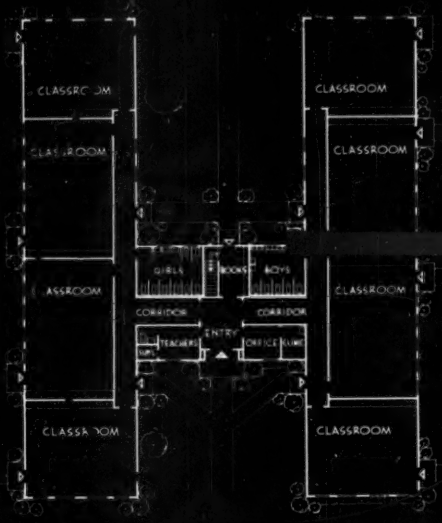

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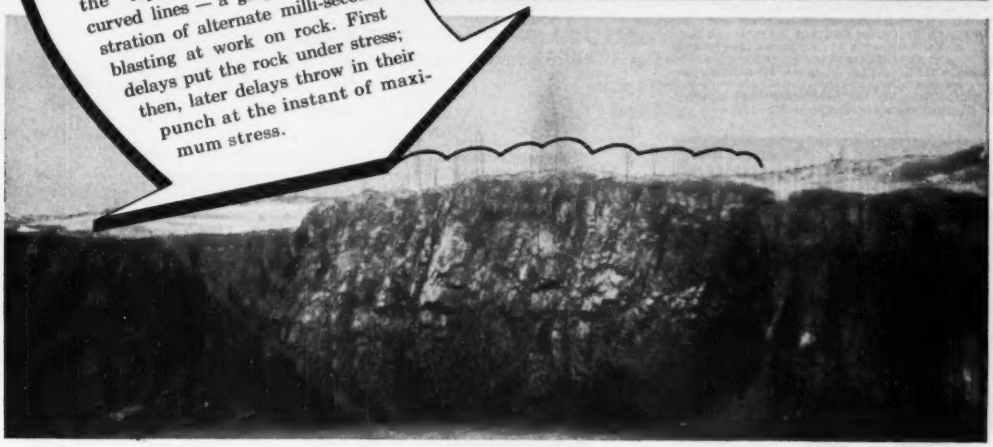
BLASTING CLUES from the ATLAS MACHINE-GUN CAMERA

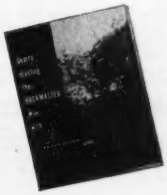
Ripple reveals key to better breakage with alternate blasting

All ready for a blast at North Jersey Quarry Company's Millington, New Jersey operation. ROCKMASTER® milli-second delay detonators Nos. 2 and 3 are in alternate holes to be fired from the *bottom*.

Here is the peak of the blast. Note the "ripple" indicated by the curved lines — a graphic demonstration of alternate milli-second blasting at work on rock. First delays put the rock under stress; then, later delays throw in their punch at the instant of maximum stress.



And, here is the rock pile ready for the shovel. Rock is practically all "bite-size" and well distributed—visible evidence that with ROCKMASTER milli-second delays blasters can utilize more of the available explosives energy to break rock and pile it to the proper height.



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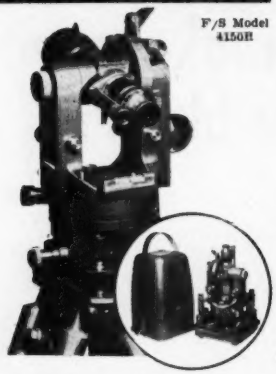

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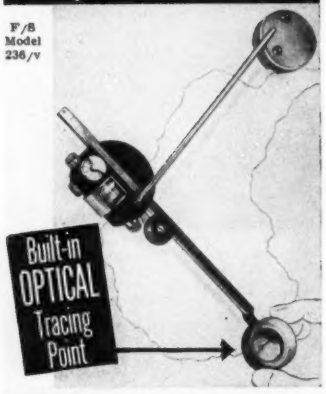

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ENGINEERING NEWS-RECORD

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Volume 149 · August 14, 1952 · No. 7

WALDO G. BOWMAN
Editor

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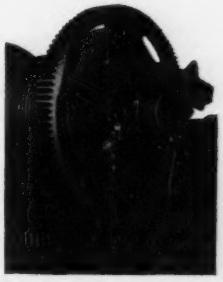

Here is the device that makes Northwest operation easier. It consists of a simple drum mechanism mounted on the end of the drum shaft. Through it the heavy clutches are shifted by the power of the engine. No compressors, no valves, no pumps. It's typical of Northwest Simplicity of Design.

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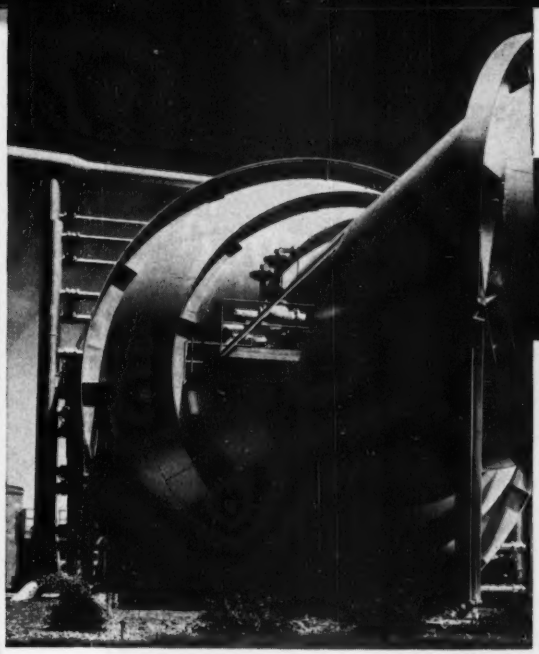

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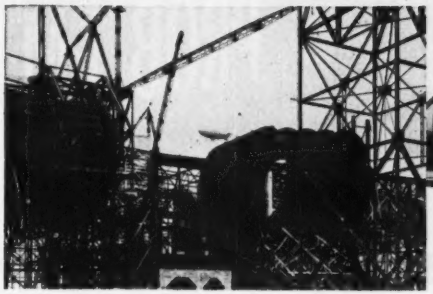

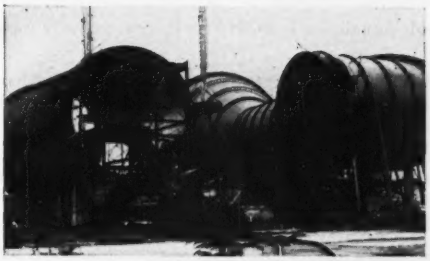

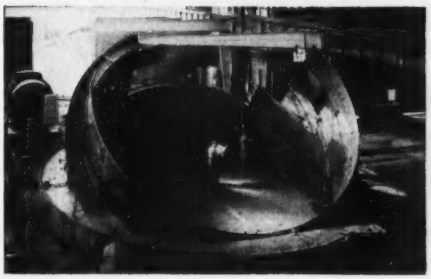

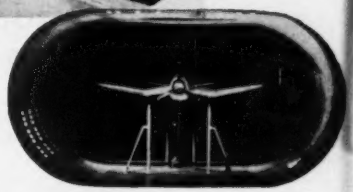

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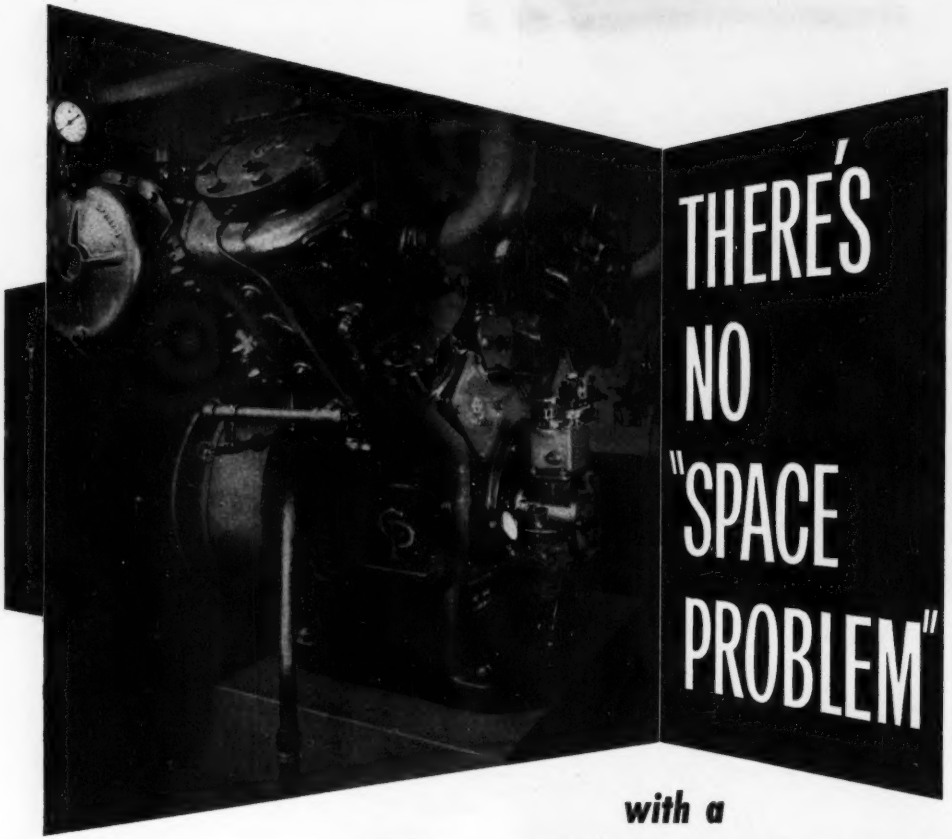

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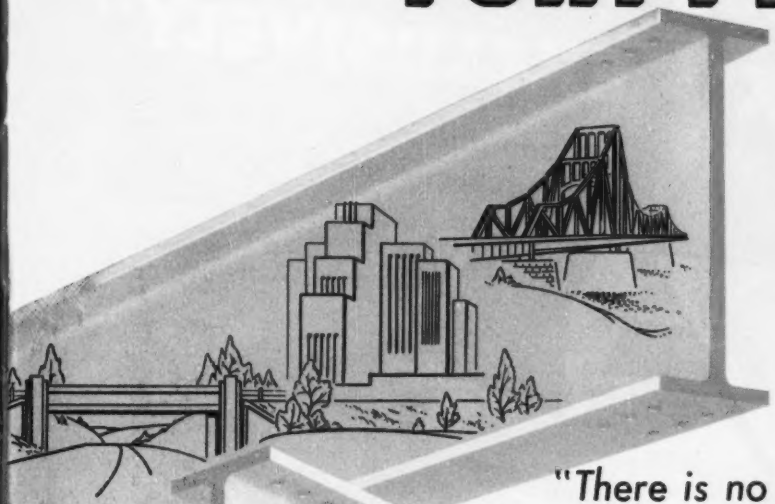

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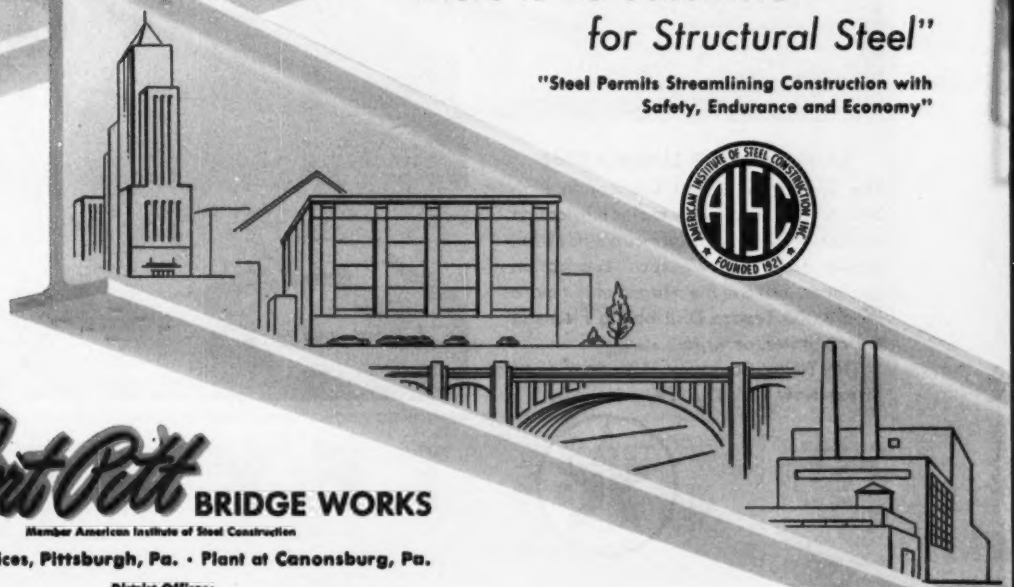

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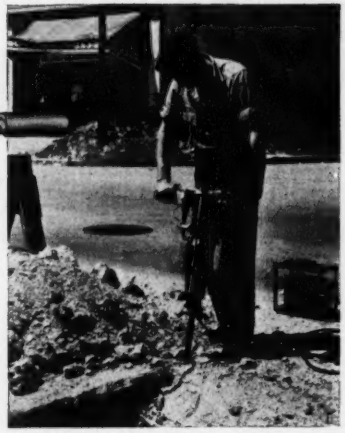

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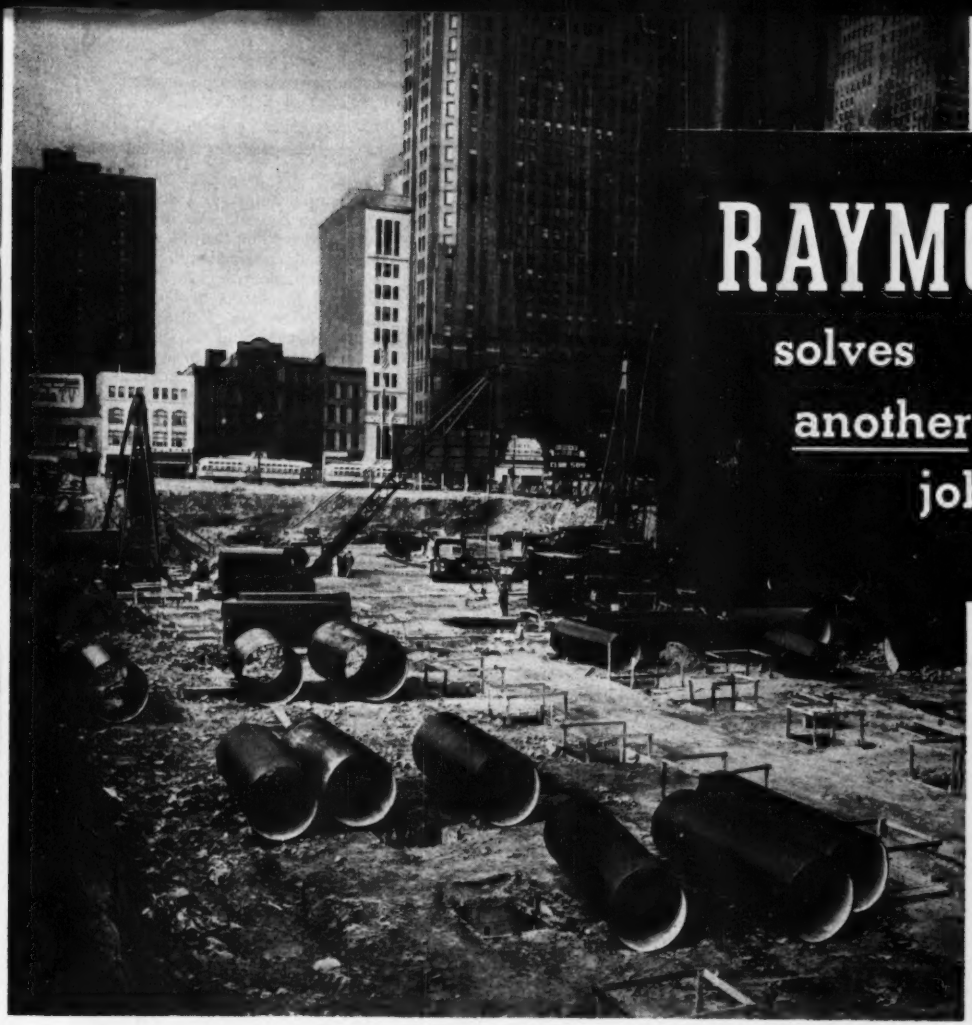

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READER COMMENT

Why so few engineers?

Sir: Is it possible that the materialistic (non-cultural, non-humanistic) bases of most engineering education and the highly factual character of a normal engineering practice may account importantly for the current shortage of engineers and the promise of an even less adequate supply in the years ahead? Is engineering proving a less attractive vocation because of our individual and collective and wellnigh universal abstention from community, public, political and social affairs, from anything in fact not obviously engineering in character? And yet an engineering profession adequate both quantitatively and qualitatively is fundamental to building and impregnable nation.

During the reign of the status quo —say up to World War I—the failure of engineers to carry a fair share of the load of economic, political, and social affairs was not too noticeable. But now, with the world in flux, concerns of local, state, national and international import are demanding solutions outranking in their basic quality those which formerly were, or seemed to be, adequate. Men and women of verve, whatever their occupation, increasingly want to have a hand in such matters, at least in their discussion.

While our professional work in the past has all but exclusively concerned itself with the stresses and strains in materials, if our calling is to have either lure or competence, it must, as Standard Oil's Frank W. Abrams says, "emphasize the stresses and strains in the relations of people in our present society." Lewis Webster Jones, President of Rutgers University, expresses much the same idea: "The universities must now put first the education of young men and women as persons and citizens, recognizing that their training as competent technicians is necessary but of secondary importance."

Quite early in my own engineering practice I discovered that practically nothing in the education I received at school and college had prepared me for coping with the social and public engineering assignments which came my way. Two breaks of one year each in my four-year course in M. E. at Lehigh—both of them devoted to newspaper work—gave me some picture of the big world outside of engineering. After graduation, while working as an apprentice machinist in Cramp's Shipyard, I acted as a watcher on Election Day in a turbulent district. This led to an active interest and participation in municipal reform movements. Then, beginning with my four years as Director of Public Works in Philadelphia, I learned that many of my engineering assignments, which led to some public benefit and added to my personal interest in life, would have been impossible had I utilized only the orthodox engineering approach. It was and still is too narrow—especially when social interests are involved.

As one example take the settlement of the Mexican oil dispute growing out of the expropriation by the Mexican government of the properties of eight or ten American oil companies. I represented the U.S.A. in these negotiations. About 75 percent of the amount of the final award was wholly determined without a quibble on valuation practices approved by the U. S. Supreme Court, in which the moneys PRUDENTLY INVESTED in an enterprise provide the major test of value.

And yet during three decades following the initiation of large scale electrical developments in the latter part of the last century the engineering profession pretty generally opposed prudent investment and embraced a fallacious and pretty silly scheme for valuing public utilities based on reproducing the property anew. This theory encouraged the inclusion of numerous imaginative elements of value such as the cost of re-manufacturing obsolete machine tools required to fabricate parts of an obsolescent plant. Various presidents of the Civils, Electricals and Mechanicals were professional proponents of the reproduction-cost-new theory in actions before courts and commissions. It was only through the constant exposure of the fallacy of this method by a group—almost exclusively non-engineering in character—that the engineering profession has now largely abandoned its advocacy.

There are many other areas especially in matters involving a public or social interest where the engineering practitioner must be prepared to part company with the generally held views of the profession.

For instance, engineers in exclusively stressing the weaknesses of labor unions are led to line up against all labor leaders and against labor unions as a social institution and in

(*Continued on page 15*)

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Builders: Campagna Construction Corp., New York; *Owners:* Lancamp Realty Corp., St. Louis; *Architects:* Rosario Candela and Paul Resnick, New York; *Engineers:* Weinberger & Weishoff, New York, and George E. Wells, Inc., St. Louis.

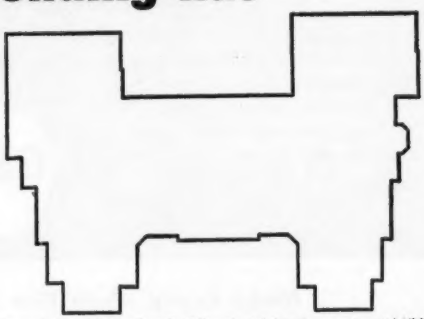
St. Louis Apartment Building has 1075-ton Steel Frame

This fine new apartment building, called The Montclair, is the first major structure of its kind to be built in St. Louis in two decades.

The Montclair is located on Kingshighway, and occupies a 380-ft block front, facing beautiful Forest Park. It is fifteen stories high, and has facilities for 206 families. Its large, well-planned rooms are grouped into apartment units of from 1½ to 6 rooms, and there are private terraces on the top five stories. Floors throughout are of cork tile, to minimize the transmission of noise.

Among numerous features of The Montclair are select shops, a beauty salon, cocktail lounge and dining room, plus a 200-car basement garage.

The Montclair has an attractive facing of gray brick, trimmed with limestone. Its 1075-ton steel skeleton was fabricated and erected by Bethlehem.



Typical plan of floors 3 to 7 of The Montclair, new apartment building in St. Louis. Upper stories have set-backs for private terraces.

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BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

FABRICATED STEEL CONSTRUCTION

(Continued from page 12)
this they part company with what appears to be the best thought in the world. Engineers thus miss an opportunity to cooperate with the better and more socially-minded elements in labor toward attaining the goal of better pay through higher production.

Through many years I cooperated with a progressive group of labor unionists, including Samuel Gompers, in an effort to have the labor movement adopt as basic tenets both increased production and labor's participation in it. This culminated in a thoroughly sound book under the title "Organized Labor and Production" (Harpers), written by Philip Murray and myself. This would appear to be a subject of special interest for engineers. So far as I know, no engineering periodical even mentioned the book.

If there is anything to the thesis that the engineer is not trained to know about or to cope with our modern world, and further that those choosing their life's work are finding this fact an increasing deterrent to choosing engineering, perhaps those guiding our engineering schools are faced with a radical decision affecting the philosophy of engineering education. As Vannevar Bush says, "The profession of engineering must grow with its opportunities and responsibilities." Since no amount of book learning will in itself make the engineer socially-minded, the conclusion seems obvious that educators must look upon those attending high school and college as all but full-fledged citizens and see to it that each such student be given a part in the extramural community life.

MORRIS LLEWELLYN COOKE
Philadelphia, Pa.

Still another oldest

Sir: With regard to two letters on p. 14, ENR July 10th issue concerning long-established construction companies, John Flood and Sons Ltd. of Saint John, New Brunswick was founded in 1848. John N. Flood, president of this company, is a senior vice-president of the Canadian Construction Association.

The Malcom Construction Company of Winnipeg, Manitoba was, I believe, founded some time earlier than this in the United States by the grandfather of its present president, W. G. Malcolm.

S. D. C. CHUTIER
Assistant Manager
Canadian Const. Assn.
Ottawa, Ont.

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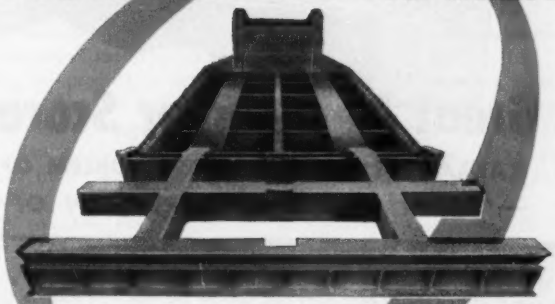

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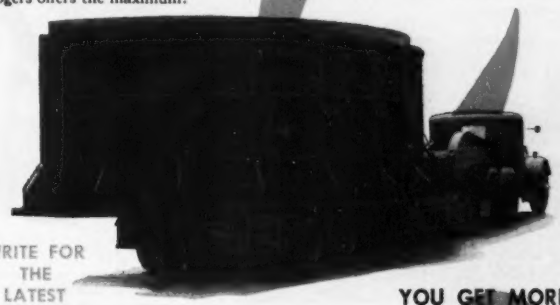

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THE KANSAS CITY STAR. MAIN EDITION

VOL. 72 NO. 264 KANSAS CITY, JUNE 7, 1952—SATURDAY—16 PAGES PRICE 5 CENTS

A BIG DOCK BLAZE

DEFENSE AT TOP

A Great Newspaper Scores Another 'BEAT'

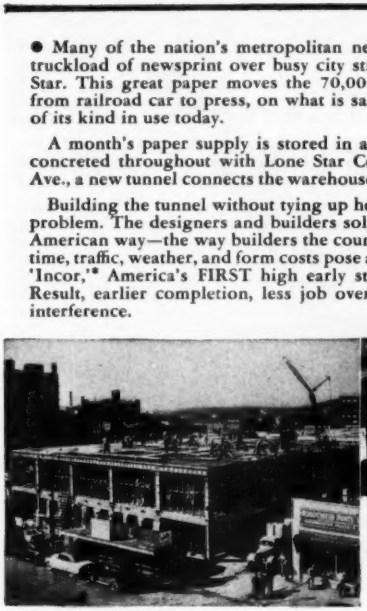
KANSAS CITY STAR SOLVES PROBLEM OF HANDLING NEWSPRINT —'INCOR' SPEEDS CONSTRUCTION OF UNDER-STREET TUNNEL

● Many of the nation's metropolitan newspapers haul truckload after truckload of newsprint over busy city streets. But not The Kansas City Star. This great paper moves the 70,000 tons it uses each year direct from railroad car to press, on what is said to be the only conveyor line of its kind in use today.

A month's paper supply is stored in a fine, new, fire-safe warehouse, concreted throughout with Lone Star Cement. And under busy Grand Ave., a new tunnel connects the warehouse with The Star's main building.

Building the tunnel without tying up heavy Grand Avenue traffic was a problem. The designers and builders solved it in the now-characteristic American way—the way builders the country over score a "beat" when time, traffic, weather, and form costs pose a problem—that is, by using 'Incor,'* America's FIRST high early strength portland cement. Result, earlier completion, less job overhead, minimum traffic interference.

*Reg. U.S. Pat. Off.



THE KANSAS CITY STAR
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Contractor:
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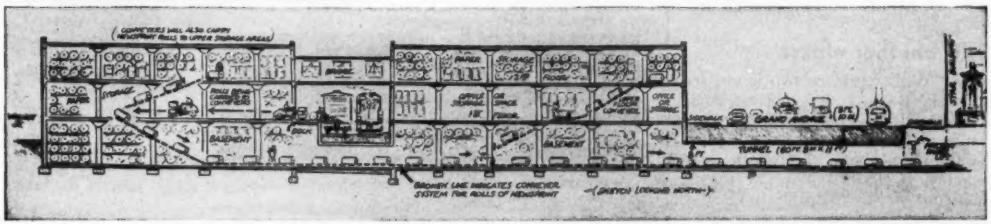
Ready-mix 'Incor' Concrete:
STEWART SAND & MATERIAL COMPANY
—all of Kansas City, Mo.

Sketch below shows how The Star handles newsprint, from railroad car to storage in new warehouse, thence by conveyor under railroad tracks and tunnel under Grand Avenue to presses in main building.



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FINANCIAL PROBLEM LOOMS FOR CONSTRUCTION

Lack of financing may hamper industrial and commercial construction after the present round of mobilization expansion dies away.

Building for production of arms and strategic materials isn't tapering off yet. But it is likely to hit its peak this quarter, and start sliding off early next year.

Financing has not been a major problem in this type of building. Much of it has been done by big companies. Heavy taxes have reduced the amount they have available from their own sources, but they have successfully raised all they needed by selling stocks and bonds to the public.

As they complete their expansion, the construction industry will look to non-defense industries and commercial projects to take up the slack. In these groups are many small companies that cannot raise money by selling securities to the public.

Already some commercial projects were cancelled because of financing. Biggest loss was in office buildings. The National Production Authority allotted materials to some big projects of this kind on the theory they would relieve unemployment in cities hit by the swing to defense production. In a number of cases, the allotments were turned back because financing could not be arranged.

• **Picture shifts**—NPA officials won't say this is a growing trend. But they do think lack of financing was one of the major reasons commercial building did not absorb more materials last spring when, for a few months prior to the steel strike, NPA had such materials to give out.

The shifting financial picture for construction is revealed by slow-down in expansion for mobilization.

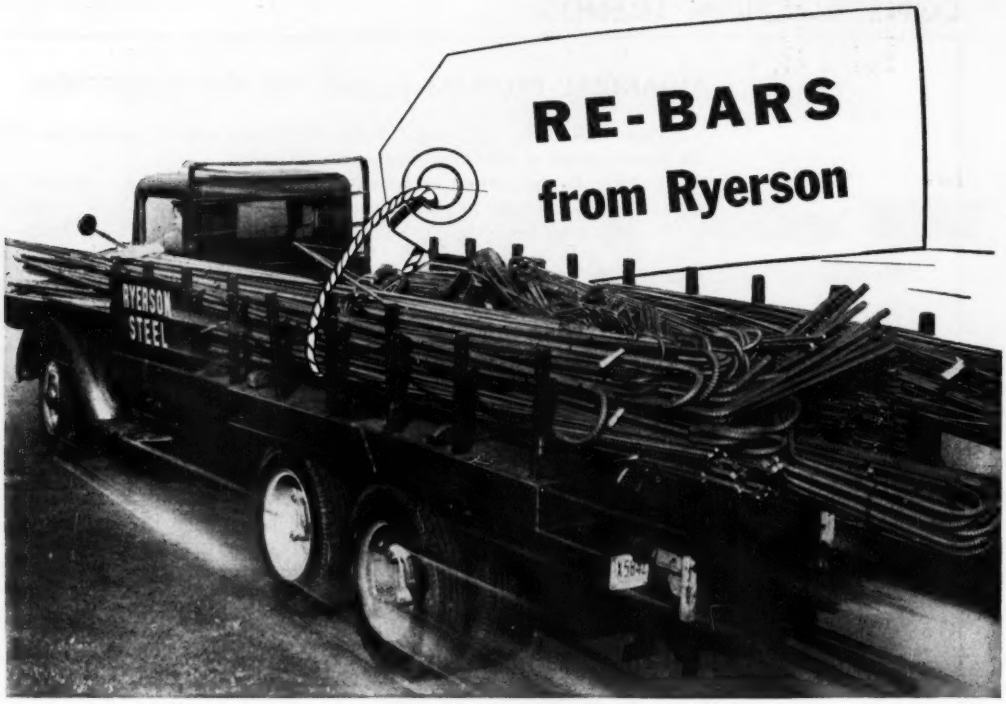
In the third quarter, expansion programs will be almost ended for the big metal producing and metal fabricating industries. Only petroleum, chemicals, rubber and electric utilities will show any substantial expansion this quarter compared to last. These will pull the total spent for new plants somewhat higher than in the second quarter. But for most defense industries, the big expansion period is almost over.

Defense industries have depended more and more on stocks and bonds to pay for expansion. In 1951, they financed 70% of their new buildings out of their own funds, and 30% from security issues and other outside sources. Only 60% of their expansion funds are coming from their own sources this year, and 40% from the outside.

• **Example cited**—In the first quarter of this year—for example—they floated $1.2 billion in new bond issues, sold $700 million worth of stock, and borrowed $700 million on long-term deals with banks and insurance companies. Of the $2.6 billion raised in these ways, about $1 billion was paid over to contractors for new buildings. The rest went for equipment. That means the construction industry has been receiving cash in the neighborhood of $4 billion per year, which its industrial customers have had to borrow.

Of course, many non-defense industries can raise money from the public as easily as the big arms makers. And many commercial projects can borrow on long terms from banks and insurance companies. There won't be a complete drying up of such money for construction, by any means. But as a group, they may not find financing as easy as the defense industries have found it to be the past couple of years. The test will come sometime next year, as materials gradually become more plentiful.

Public projects will take up some of the expected slack. But government economists don't think they will take the place of the slump in industrial construction. Which leaves the problem of financing industrial and commercial projects as one of the big question marks of the post-mobilization period.



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Because fabricated reinforcing bars are a Class A Product, it's essential that we receive an allotment from you, well in advance of delivery, in order to take care of your requirements promptly and completely. So send us your prints now for a lump sum or average pound price on your next job.

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CLAMPS ON METAL PRICES—Buyers of construction materials won't pay quite the full figure of price increases granted for steel, aluminum and copper. It now appears the new prices will rise by something like this: steel, up $4 a ton for shapes, $31 a ton for wire rope; aluminum, copper wire and brass mill products, up 60% to 80%.

The reason is tied to the Office of Price Stabilization's already effective "earnings standard," under which an entire industry—not a single company—can apply for ceiling price increases. However, after an industry gets an increase (by showing its earnings have fallen below 85% of its three best recent years) only a part of the price increase may be passed along to the consumer.

A quick decision is due on how much pass-along will be allowed.

CONTROLS SLIP SOME MORE—Mobilizer John R. Steelman's "confidential" report to the President confirmed two things: Regulation X is definitely on the way out (page 21); and the control agencies are losing heart and effect.

Although the new Defense Act gets the blame, the reasons are deeper: the control agencies see drastic changes coming, are getting that "hanging on" look, just holding out until the elections. OPS has already chopped off some 7,000 workers (because of appropriations cuts), numerous OPS and NPA field offices have been closed or reduced. The feeling spreads to most other agencies as well—they're all complaining about the weakness of the new law, not doing much about anything.

The betting is that there'll be little real regimentation left in Washington, as soon as steel strike damage works its way through the economy.

NO PRICING RULE CHANGE—The general discouragement is probably the key to what's happening to a long-advocated amendment to CPR 93, the regulation of pricing rules for contractors. As of now, it's also a safe bet that nothing is going to be done.

Here's what's happened: The amendment is aimed at helping small contractors by setting up unit pricing rules for those who install work for any buyer, at a flat price per unit to be figured on basis of current costs plus nine-tenths of historical percentage markup in the base period (July 1, 1949-June 28, 1950).

But OPS' clearance committee has sent the amendment back to the Construction Section of the Building Materials Branch for further consideration. At best, it would take 60 days to get the amendment cleared.

POINT OF LAW—After more than 11 years of litigation, attorneys for the Federal Power Commission have come up with a reaffirmation of their belief that the navigation clause of the Constitution gives the federal government control over tributaries of navigable streams.

The argument was an outgrowth of litigation that started in 1941 over FPC control of Aluminum Company of America's Santeelah and Cheoah Dams in North Carolina, and Calderwood Dam in Tennessee (all on the Tennessee River). In 1947, FPC decided it had jurisdiction; the company objected; and the matter has been before FPC since. Last week, FPC lawyers introduced evidence to show that operation of the dams affected stream flow near McGhee, Tenn., thus also affecting navigable conditions on the river.

An FPC lawyer later told newsmen that navigation in the McGhee area is now mostly by pleasure craft—but he added that, anyway, "navigation" brings the projects under the commerce clause of the U.S. Constitution.

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Regulation X is foundering

Home builders had encouraging news last week. In a confidential report to President Truman, Mobilization Director John R. Steelman predicted housing credit controls will end by October 1.

Dropping credit controls, Steelman said, will be necessary to comply with changes in the Defense Production Act calling for relaxation when housing starts fall below a seasonably adjusted annual rate of 1.2 million for three consecutive months.

The Federal Reserve Board and the Housing and Home Finance Agency, which administer Regulation X, will use figures for June, July and August to determine the rate.

Starts in June were 10% below the 1.2 million rate and show little sign of rising above that before August.

Once the rate is established, the law gives the agencies 30 days to act. So action is expected before the end of September. Steelman indicated, and Federal Reserve Board officials promptly confirmed, the controls probably will be removed altogether instead of requiring the 5% down payment allowed in the law.

Three months ago, news such as this would have had far more impact than it has now. The truth is that Regulation X has become a shell of a regulation, with little real effect on down payment requirements. Now that it is crumbling, its absence will not be greatly missed. And the home building market will be considerably clarified.

Scores of homebuilders across the country, queried last week by ENGINEERING NEWS-RECORD, had varied reactions. Here is a report from a typical area:

• **Hartford, Conn.**—For seven months ending July 31, there were 3,450 houses started in 22 Hartford county communities, at an estimated value of $28 million. Starts are 1,500 more than in the comparable period of 1951 and dollar value is highest in Hartford county history.

Sales had lagged during the early months of the year, but now they have picked up to a point where only approximately 200 completed houses are unsold. At this point the county is on way to breaking the 1950 building record when approximately 4,000 houses were constructed.

Defense Mobilizer Steelman forecast the end of Regulation X. (Wide World)

Steelman's announcement is not expected to have any great effect on construction. Builders say further relaxation of down payment requirements will have little or no effect on the requirements of financial institutions, and as a result they expect no additional increase in building activity on the basis of the announcement. After Oct. 1, sales may be stimulated, but only slightly because the banks will still require approximately one-third down except in individual gilt-edge cases.

Any effect at all will be noticed on home building over the $12,000 bracket where sales have tended to be slow. Under that bracket there has been no sales problem.

• **Perspective**—What is true in Hartford, appears to be pretty generally true in most sections. Home builders have been pressuring for the relaxation of Regulation X for a long time. They say high down payments have been unfair to a large part of their market—people who have the income each week to handle regular payments, but can't get their hands on enough cash at one time to meet the down payments needed.

The result: They have been building most houses to sell below the $12,000 bracket. With the ending of Regulation X they expect new markets to open up above that bracket.

Bankers have been pressuring for higher interest rates (now 4% on GI loans, 4½% on FHA) because they claim the spread is too small between what they have to pay on money (up to 3%) to compensate them for the risk.

The result: They have been requiring large down payments, With the ending of Regulation X, they will still require large down payments but they will be free to choose.

• **Too much talk**—Another comment that frequently cropped up in ENR's spot check, showed many builders were thinking along these lines:

South Florida home builders and mortgage men expressed the hope that government spokesmen will make up their minds about Regulation X and "quit spouting off" the stream of statements on proposed relaxations has confused the market.

To counter some of the confusion, President William F. Thompson of the Builders Association of South Florida issued a statement published in the Miami Herald.

"No matter what the government does about Regulation X, the builder can still continue to demand whatever down payment and mortgage maturity that he and the investor financing his houses decide is a good deal for them. Historically, houses built to sell in the South Florida market for $12,000 or more are sold on higher down payments than 5%. This is because mortgage investors like to see a buyer invest a reasonable amount of his funds in a home. It is quite likely that this policy will be continued even after Regulation X is relaxed, and that most homes priced at $12,000 or higher will require 20% down payments as a minimum."

Bankers in South Florida, were more chary. They said conventional institutions will keep in the same groove they're now in. One said "Washington politicians are trying to make political capital out of Regulation X, but they're only confusing the public, the home builders and the bankers."

• **Other areas**—Here are excerpts from reports to ENR from various other sections:

Home building outlook . . .

In Pittsburgh, Pa., builders are constructing more homes this year than in 1951, and expect to build even more next year with Regulation X lifted . . . **In Columbus, Ohio,** builders said the end of housing credit controls will mean an immediate spurt in building of medium-priced homes. Most of the new homes in the past few years have been in the low-price field . . . **In Boston, Mass.,** "there will be no change in the housing market on homes under $15,000. Banks will be more lenient in their terms on homes upwards of $15,000. The terms are about 40% now; probably will be about 33⅓% later." . . . **In Louisville, Ky.,** Steelman's announcement is not expected to effect measurably any element in the market. Low-priced houses already are selling as well as they will when controls are lifted. Those in the higher brackets, $15,000 and up, will start selling faster when credit controls are lifted. Bankers say that what is particularly needed is an increase in the interest rates on GI loans . . . **In Cincinnati, Ohio,** building activity in the area is running considerably less than last year. For the first six months a total of 2,611 units received permits this year against 4,380 in the same period of 1951. Builders predict the full effect of the lifting of curbs will be felt in the early part of next year. Improvement in the $10,000 to $14,000 price range is anticipated.

In Detroit, Mich., the market area is down from peak construction in 1950 of 49,000 units to about 28,000 units. There has been a slight rise in the last few months. Builders say people have grown tired of waiting for released credit. The real need is for mortgage money. It's extremely difficult to get a GI loan because insurance companies and banks are putting their money where the return is greater . . . **In Milwaukee, Wis.,** builders do not expect the end of Regulation X to flood the market with new buyers. The market has been slow. It has become a buyer's market and people are shopping around. Lifting of Regulation X might stimulate the market "a little bit." Milwaukee County is among 14 Wisconsin counties just cut off from State Veterans Housing Loans because they have overdrawn their allotments. Under the loan program, veterans can borrow up to $3,500 for payment on homes costing not more than $15,000 at 2% interest. This is expected to offset most of the effects of lifting Regulation X . . . **In Chicago,** James C. Down, Jr., president, Real Estate Research Corp., says, "announcement of the end of housing credit controls will undoubtedly add a stimulus to housing construction in the Chicago area, but the impact is expected to be relatively slight."

In Kansas City, Mo., housing in the metropolitan area is good. In 1949, 50, and 51, close to 25,000 units were constructed in five counties and the pace this year indicates that as many will be built this year. Just started is a $25-million 1,757-home project by Praver & Sons of New York to consist of rental units and sales units in the $9,500 and $9,999 class. Builders feel relaxation of Regulation X will aid building in the $12,000 to $18,000 bracket . . . **In New Orleans, La.,** the housing market is described as slow by Fred Loucks, president of the Home Builders Association there. He blames credit restrictions for discouraging home construction in the $12,000 to $20,000 range. He estimates there are 3,500 homes under construction in the city, of which about 900 are in the $12,000 to $20,000 range; 350 in $20,000 and up; and the rest under $12,000. If housing credit controls are eliminated, he estimates that about half of the houses would be in the $12,000 to $20,000 range.

In St. Paul, Minn., anticipated elimination of credit curbs on housing has slowed up sales of some new homes in the twin cities area. One housing official observed that Regulation X relaxation will not have as much effect on the decision of renters to buy homes as will the action of city councils in St. Paul and Minneapolis on federal rent controls . . . **In Dallas, Texas,** one of the top three or four cities in the nation in the pace of home construction this year, with 10,000 homes scheduled. Right now more $9,000 to $12,000 houses are being built than ever before. Steelman's announcement has caused some potential buyers to back off and wait until October . . . **In Salt Lake City, Utah,** Steelman's announcement brought optimism on the part of home builders—but canny statements from mortgage bankers that demand rather than credit controls, will govern the home market when Regulation X is lifted. Bankers are very conservative on approving FHA and VA mortgages because of "unattractive interest rates." They say they have been able to dispose of crowded mortgage portfolios only as a result of personal solicitations of insurance companies and mutual savings banks in New York. One builder said "we hope the credit control relaxation will change the picture somewhat, since there is a sizeable demand for medium-priced homes, but we can't build without money and money is hard to find."

In San Francisco, Cal., present housing market here is excellent in bracket up to $12,000 and ranges from "quiet" to "firm" in houses over $12,000. Sales are up in the last month. Builders say increase has nothing to do with recent easing of Regulation X, but is seasonal. It's the general opinion that the announcement that credit controls "might go off" will have little if any effect on the market—although, as one builder says, "Buyers are so confused with contradictory releases that it has upset the real estate market for the last year. People keep holding back, and this latest release will only further confuse the picture and delay them more. All seem to agree that sale might show a healthy increase if restrictions actually go off Oct. 1, but loaning agencies themselves will probably regulate credit. The Bank of America, which finances many homes, reports all sizes are up in the last 30 days. . . .

"The bank says if restrictions go off, sales would boom, if the financing is

Airport probe opens

Philadelphia councilmen who visited the opening of Pittsburgh's new airport (ENR June 5, p. 50), became suspicious about their own airport that has been a-building since 1946.

Pittsburgh's terminal building, second largest in the country, cost about $10 million. Philadelphia's, originally estimated to cost $8 million, is now expected to cost closer to $14.5. The councilmen wanted to know why.

They voted $10,000 for an investigation (ENR June 26, p. 83), which opened last week under the chairmanship of Councilman Victor H. Blanc. First five days of the hearing produced nothing sensational.

Principal witness was Samuel S. Baxter, Philadelphia Water Commissioner, who is in charge of the project. He told them that Airway Engineer Consultants, since being retained on a 6.5% fee for design, had received fees totaling $1,515,000. Questioned on use of expensive building materials, he pointed out lower maintenance will be required. Everything appeared in order.

By week's end the committee had put its finger on one item that caused serious embarrasment. "Super" telephone booths in the terminal building were designed to "fit the general decor of the lobby" at a cost of $25,000. Orders were issued to halt plans for their construction. Bell Telephone Co. has offered to install booths free.

available. They say builders would be able to interest buyers in a different financial group."

In Los Angeles, demand remains strong but down probably 10 to 15% from last year. Builders feel that the postwar backlog has been taken care of but that there is still a healthy demand for new housing from normal sources, such as the continued influx of people from other parts of the country. An official of Home Builders Institute estimated the demand will continue at about 100,000 units a year. But he thinks that only about 60,000 or 70,000 will be built this year because of buyer's inability to meet credit restrictions. That is the general feeling—the market is healthy but will be considerably healthier when restrictions are lifted.

NPA allots materials to 162 new projects

The National Production Authority this week announced materials allotments to 162 new projects in the commercial - religious - municipal - entertainment field.

Most of the allotments were made just before the steel strike began. NPA said they call for delivery of steel, copper and aluminum products in the third and fourth quarters of 1952, or in subsequent quarters. The announcement was a confirmation of NPA's declared policy of standing pat on all allotments previously made for the third and fourth quarters of this year.

In accordance with the agency's new post-strike regulations, third-quarter allotments are valid for deliveries until the end of November, and fourth-quarter tickets are good until Feb. 28, 1953. (ENR July 31, p. 21).

Estimated cost of the 162 projects totals $121 million. The three largest groups in the list are made up of 21 office buildings estimated to cost nearly $48 million; 49 retail stores totaling almost $45 million, and 22 churches costing more than $9 million.

A $35 million office building for the Prudential Insurance Co. in Chicago accounts for most of the money in the first group. Chicago also gets a $3.4 million department store.

Four big shopping centers are approved for Ohio: one in Cincinnati costing more than $7 million, two in Fairview and Maple Heights at about $3 million each, and another for Mansfield at half that figure.

• **More listed**—Other big projects in the list include a $5.5 million cathedral in Newark, N. J., and a $3 million department store for Dallas. Besides the jobs mentioned, there are five others in the $2 million class, and ten in the $1 million to $2 million range.

Allotments are made to projects in 36 states. Illinois is first in estimated dollar value, with eight projects costing about $39 million. Ohio comes next, with 16 jobs worth nearly $17 million, and Pennsylvania takes third place with the same number of projects valued at $14.6 million.

NPA's policy of sticking to commitments applies only to allotments of material. It does not promise anything for projects that received advance authorizations but no allotments.

Last winter and spring the agency authorized a number of projects in the commercial category for fourth-quarter starts, with allotments to follow later as materials became available. Authority to start those jobs may be deferred until a later quarter, NPA now says.

Materials available for new projects will go first to starting industrial plants essential to defense. Only if there is a surplus of steel and other controlled materials will allotments be made to jobs in the commercial-municipal field.

At present the steel situation has not clarified to a point where NPA can predict the outlook. Officials won't say definitely that no additional commercial allotments will be made for the fourth quarter. But they warn that if the steel supply gets too tight, they may still have to withdraw some of the fourth-quarter commercial allocations already made.

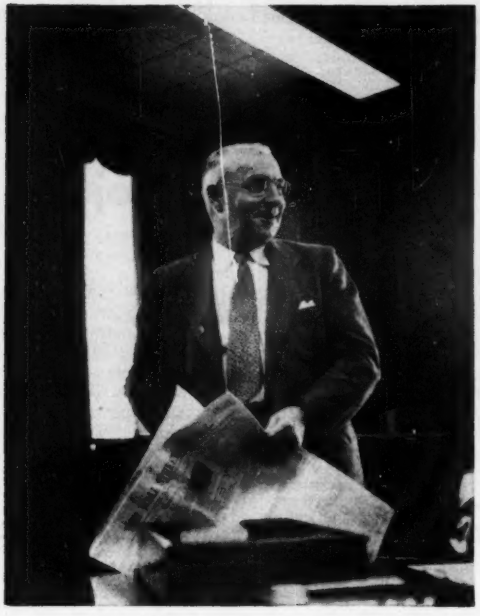
Construction moves ahead at Palisades

Construction will soon be getting into full swing at the site (see picture below) of the proposed Palisades Dam on the Snake River in Idaho near the Wyoming border—the largest earth-fill dam ever undertaken by the Bureau of Reclamation.

Last week a contract to furnish four 39,500-horsepower hydraulic turbines for the 114,000-kw power plant was awarded to the S. Morgan Smith Co. of York, Pa. on a bid of $1,421,700. The plant is being constructed to provide approximately 700 million kwh annually for development of phosphate in the area, for atomic energy work at Arco, Idaho, and for irrigation. Bids for furnishing and installing four 28,500-kw generators will be invited later in the summer.

Current construction of the dam and power plant is progressing under a contract awarded in April to a low joint-venture bid of $29 million by the J. A. Jones Construction Co. of Seattle, and the Charles H. Tompkins Co. of Washington D. C. (ENR May 1, p120).

Scheduled to be completed in 1,950 days, the work schedule for the dam includes construction of a 260-ft high, 2,000-ft long barrier. The reservoir it creates will store 1.4 million ac-ft of water. In addition to generating power, this supply will provide supplemental water for 650,000 acres.



In a top position to know just what lies ahead in structural steel, American Bridge President Frank K. McDanel, gives an encouraging outlook. He says industry, speeding to make up strike losses, will have plenty of steel on hand for construction by next year. (Photos by Purdy)

McDanel optimistic on steel as strike-free mills roll

This week steel fabricators are buckling into a tremendous job. Steel mills are rolling and shipments of structurals, plate, reinforcing bars and other shapes are pouring into supply pipelines once again. Fabricators are feeling grim pressure to rush steel fabrication jobs for stalled or stalling construction projects.

After the 54-day steel strike, there is a lot of ground to be made up. The speed with which it can be made up is vital to construction men. Many jobs have been rescheduled again and again to meet the delays that are inevitable. But rescheduling is reaching its elastic limit. Losses and layoffs, already started, are going to spread. The magnitude of the spread will depend, to a large extent, upon how fast the steel mills and the fabricators can make up the ground that has been lost.

The American Bridge Division of U. S. Steel with its sprawling fabricating shops at Ambridge, Pa. (largest in the world); at Gary, Indiana; Elmira, N. Y.; Trenton, N. J.; Pittsburgh, Pa.; and Minneapolis, Minn.—was strikebound. Now the shops are humming again. In an interview with ENGINEERING NEWS-RECORD last week, Frank K. McDanel, president of American Bridge, said the future may not be as black as some have painted it.

• **Outlook**—Steel will be rather tight through the rest of this year, but "I don't anticipate any substantial trouble during the 1953 building season," McDanel said. As he sees the picture on fabricated steel, here is the way it adds up:

The strike put structural steel supplies a good three months behind schedule. It looks now as though it will be the second quarter of next year before steel becomes freely available for steel construction projects.

"Before the strike it looked as though steel would be fairly free in the last quarter of this year and freely available in 1953. The steel situation was tight but the end was clearly in sight. Now it appears we've lost about 18 million tons of production. That has to be made up. And there's a complicating factor. Army and Navy steel requirements are reasonably sized, and they come first," he said.

Like other steel men, McDanel believes the industry can put steel where it ought to go if the government doesn't muddy up the waters.

"Last spring, the government was discouraging use of steel past the point of common sense. The situation today, as the end of the 1952 steel strike, is worse than it was at the end of the 1949 and 1946 strikes, because this one lasted longer and involved more. This strike came in the summer time and postponed more building projects. But I think enough steel will be around to take care of just about all next year's building program," he said.

McDanel is not very worried about

The hard road up

Frank K. McDanel bosses the big fabricating and erecting American Bridge Division from an office high in the gleaming new U. S. Steel-Mellon Bank skyscraper in Pittsburgh's Golden Triangle. He got there the hard way. He started working in 1904 at the age of 15—as a layout helper for the company he now heads—in the Ambridge plant. He went to night school, took continuation studies, and even studied a correspondence course. He was advanced to foreman and superintendent. By 1923, McDanel was general superintendent of shops. He supervised fabrication of steel for the Empire State Building, the San Francisco-Oakland Bay Bridge, Radio City, among other projects. In 1940 he became a vice president of the company; in 1946, president of American Bridge and of Virginia Steel Co. and a director of U. S. Steel Co.

the possibility of iron ore shortages next winter causing mill shutdowns next spring and bringing new steel shortages. He says enough additional ore will be shipped by rail this fall to make up the shortage resulting from the strike.

"I just hope that people who normally come on the market in the fall don't get discouraged. Customers for road and bridge steel will be coming in then to line up next year's construction work. I think the steel will be here," he said.

• **Other factors**—Next year's steel for bridges, highways and buildings is going to carry a higher price tag, but McDanel says "just how much of the price increase will be applied to our products still is wrapped up in the mysteries of OPS."

This week the Office of Price Stabilization had under consideration a list of increases recommended on specific products by steel industry representatives. OPS has already issued a preliminary order setting July 26 as the effective date of the steel price increase. It authorizes producers to ship steel without billing. Billing at higher prices will be made after the detailed order is issued, and chances are it will follow the industry recommendations closely.

Here is a sample of what has been recommended—structural shapes including bearing piles, $4.00 per ton. Plates, $4.00 per ton. Concrete reinforcing bars, unfabricated, $5.00 per ton. Galvanized sheets (formed roofing, siding and valley ridge and flashing), $5.50 per ton. These increases will raise the price of fabricated steel. In addition, the fabricator will expect allowances for his increased labor costs.

• **Output up**—In Washington last week Defense Production Administrator Henry H. Fowler gave supporting evidence to predictions made by McDanel. He told a news conference that the speed with which the steel industry has managed to step up its output since the end of the strike has "exceeded all expectations."

The rate of output last week attained the surprising level of 87% of normal compared with 45% the week before. This week, it was expected to reach about 95%, according to Iron Age.

Fowler said NPA intends to enforce its edict reducing the maximum inventory of steel permitted any manufacturer, to 30 days compared with the 45-day stocks previously permitted. The NPA compliance staff has "flying squads" out making spot checks of inventories against any orders outstanding.

Contempt charges fly in housing feud

The running battle between a Los Angeles City Council Majority and the City Housing Authority over $110 million in public housing has reached the point of contempt proceedings against the councilmen.

The CHA counsel has asked the California Supreme Court to set a hearing for Sept. 29 at which councilmen must show cause why they should not be cited for contempt for refusing to comply with the court's writ of mandate of June 27.

The writ ordered the council to carry out terms of the city's agreement with CHA. A bare majority of councilmen, backed by a substantial public majority in balloting last June 3, want to cancel the agreement, maintaining it can be done under recent federal legislation allowing cities to back out if they repay the federal government for funds expended. CHA, Major Fletcher Bowron, and the State Supreme Court hold that the agreement is a binding contract.

CHA's contempt-of-court move followed council refusal, by a 7-5 vote, to approve a resolution initiating annexation proceedings for 5.77 acres of county land included in the west Los Angeles project site.

• **Legal snarl**—The council, through the city attorney, had asked the State Court to order CHA to abandon the project on grounds it was illegal because of inclusion of county land.

The court refused—but left some doubt as to whether it was denying the petition or merely refusing to take jurisdiction in the matter. If the latter is the case, the petition could be taken to lower courts for a legal battle that might take months. In turning down the annexation resolution, the councilmen put themselves on record as merely delaying action until the court ruling could be clarified.

CHA made other allegations of council stalling and complained of lack of cooperation on the part of the city departments. Anti-housing councilmen for their part continue to castigate bureaucratic contempt of public opinion, and are attemping to negotiate with Washington housing officials to force the local authority to abandon the program.

Only two contracts, totalling $6 million, have been let so far by CHA—West Los Angeles and San Pedro. Work has already begun on the San Pedro project, where there was no legal question giving the councilmen any chance to fight a delaying action with reasonable prospect of avoiding a contempt citation.

So complicated have the legal questions become that some have hired private attorneys to help guide them past the shoals of contempt charges.

Meanwhile resolutions are under consideration to place a bond issue before the voters to raise the some $14 million the city would need to reimburse federal expenditures if it succeeds in cancelling the program.

Still pending are claims brought against the city by CHA for upwards of $1.5 million in damages the CHA says it has suffered because of delay. (ENR Aug. 17, p. 23). The city attorney has called the claims invalid.

Monolith toppling dropped at Waneta Dan

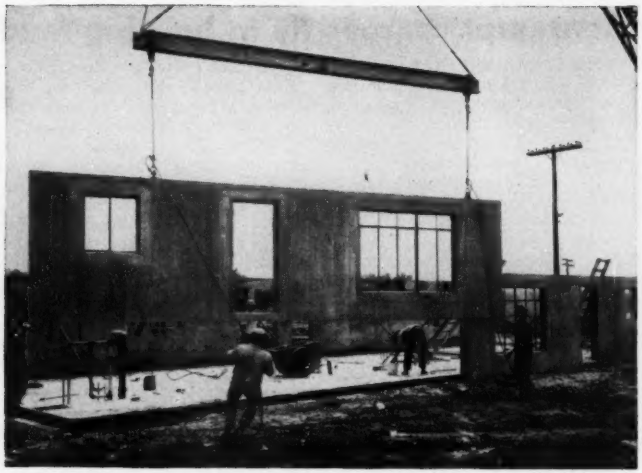
Plans for toppling an 180-ft monolith across the Pend D'Oreille River in British Columbia to permit construction of Consolidated Mining & Smelting Co. of Canada's $30-million Waneta Dam have been dropped. (ENR June 5, p. 23)

As the work of erecting the 6,000-ton pillar was about to start, construction engineers learned of special upstream water regulation planned across the border in the U. S. which would permit construction of a temporary rock-fill dam by conventional methods.

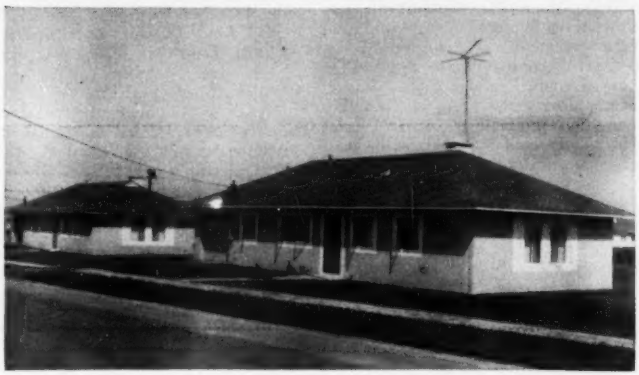
The new Cabinet Gorge Dam in Idaho is scheduled to begin storing water in mid-August. A short distance downstream, the dam at Albeni Falls is to cut the discharge of Pend D'Oreille water to a minimum for a period of two weeks. As a result, the flow of the river at Waneta will be cut by about 50%, allowing construction of a rock-fill diversion structure with some 15,000 cu yd of rock and gravel.

The Waneta power project is being built near the confluence of the Pend D'Oreille River with the Columbia, 13 mi south of Trail. In view of the irregular contour of the river bed and the large volume of swiftly moving water, the tipping of a monolith across the south two thirds of the river offered the easiest and most practical method of constructing a temporary barrier.

The power plant, scheduled for completion late in 1953, will have provision for four generating units, with the initial installation of two units generating 210,000 hp. Stone & Webster, Canada Ltd. is handling the design and general supervision of the power project and has contracted the excavation and construction of the dam and powerhouse to the Northern Construction Co. and J. W. Stewart Ltd.



Forrestal Village, sandwich-walls cast on site . . .



Become tidy, low-rent apartments for Great Lakes Navy families.

Housing project uses sandwich walls

Making use of available utilities and roads of a World War II training camp, builders are completing an ambitious Wherry Act housing project near North Chicago, Ill.

The 1,000-unit permanent-type rental project, Forrestal Village, makes wide use of tilt-up concrete sandwich walls. Built by Corbetta Construction Co. of New York and Price Bros. Pipe and Construction Co. of Dayton, Ohio, the apartments, averaging 960 sq ft, will be rented to Navy men stationed at the Great Lakes training center at rates designed to show a 5% return over a 39-yr period.

Reinforced 8-in. walls, precast on the site, are raised into positon by a derrick when sufficiently cured. The sandwich is made up of a 4-in. layer of concrete, a 1½-in. slice of foam glass insulation and, forming the inside wall of all the rooms, a 2½-in. layer of concrete which is covered with a resin emulsion paint, to which latex and asbestos are added for texture.

Party walls are solid concrete, 6 in. thick, serving a double purpose of fireproofing and sound-deadening.

Ceilings are 8-in. Flexicore panels, 16 in. long and 24 ft long. The two cores in each panel, running lengthwise, are used as heating ducts.

Average cost for two or three-bedroom units is less than $10,000, with average costs for one-bedroom apartments running under $9,000.

The 303 buildings, 102 one-story and 201 two-story, call for 4,896 precast pieces 7 ft 8 in. and 8 ft 10 in. high and an average of 21 ft long. Gross wall area is 836,220 sq ft, with 151,455 sq ft out for windows and doors. "U" factor for the walls is .22.

NEWS BRIEFS

• **Atomic search**—Peter Kiewit Sons Co. last week was hired by the Atomic Energy Commission to collect information that will help AEC decide where to build its $1.3-billion gaseous diffusion plant.

• **Bridge bond test**—California's Supreme Court has set Sept. 3 for a hearing in a case to test the validity of a proposed $50-million San Francisco-Oakland Bay bridge approach bond issue. The bonds, which would be issued by the State Toll Bridge Authority, would keep the Bay Bridge from becoming toll free, presumably until a second span is built across the bay and also paid for.

• **Gates reclosed**—To stem the flood and protest that followed opening of 15 of the 16 gates in the St. Mary's River compensating dam in the channel connecting Lake Superior and Lake Huron, officials last week ordered some of the gates closed again (ENR Aug. 7, p. 25). But relief was brief. All 15 were to be reopened this Wednesday.

Engineer plans cut by 50% compared to last year

Planning program of the Corps of Army Engineers for the present fiscal year will cost about half as much as the program for the past fiscal year.

The corps had allocated $2,015,000 among 36 waterway projects for planning during fiscal 1953. In the previous fiscal year it allocated $3,998,400 for planning of 32 projects.

Of the 36 projects on this year's planning list, 12 are multipurpose projects containing hydroelectric installations. Names of the power projects, their location, initial installed capacity and amount of planning money allocated this year are as follows: Howell Mill Shoals Dam, Alabama, 200,000 kw, $100,000; Greers Ferry Reservoir, Arkansas, 64,000 kw, $40,000; Hartwell Reservoir, S. C.-Ga., 180,000 kw, $150,000; Jessamine Creek Reservoir, Ky., 13,900 kw, $40,000; Fort Peck Dam, (second power plant), Montana, 80,000 kw, $25,000; Chamita Reservoir, New Mexico, 15,000 kw, $85,000; Keystone Reservoir, Oklahoma, 60,000 kw, $90,000; Hills Creek Reservoir, Oregon, 20,000 kw, $75,000; Carthage Dam, Tennessee, 92,000 kw, $50,000; McGee Bend Dam, Texas, 28,800 kw, $50,000; Cathright-Falling Spring Reservoir, Virginia, 34,000 kw, $100,000; Ice Harbor Lock and Dam, Washington, 195,000 kw, $140,000.

JOHN T. DUNLOP, head of the construction industry's joint board for the settlement of jurisdictional strikes, stood on firmer ground after a court test.

Dunlop board wins court test

The construction industry's four-year-old plan for deciding jurisdictional disputes through its own national joint board stood on firmer ground this week after winning its first court test.

The joint board, headed by John T. Dunlop, has had a shaky life. There were times when it looked as if it might fall apart when some AFL building trades unions didn't like the way decisions were going. There was some question, too, whether the joint board could take the place of Taft-Hartley on jurisdictional questions.

The National Labor Relations Board answered this by refusing to intervene in jurisdictional disputes where the joint board had a part in settling them. It set this policy last winter in denying a request of Manhattan Construction Co. that it intervene in a dispute between the AFL carpenters and laborers over the stripping of wooden concrete forms.

• **Backing**—Now U. S. Circuit Court of Appeals at Denver has, in a sense, backed up NLRB's position. It has refused, on procedural grounds, an appeal by Manhattan Construction Co. for review of NLRB's action. This is the first court test of this issue.

The court did not specifically O.K. the NLRB action. It denied Manhattan's petition because there was no "final order" by the board for it to review. Taft-Hartley gives courts the power to review only final orders of NLRB. Since the board didn't order Manhattan to do something, the court ruled it had no authority to pass on the case.

Manhattan complained that the carpenters violated Taft-Hartley's ban against jurisdictional strikes by insisting on stripping wooden forms from concrete. This work was being done by AFL laborers. The carpenters struck to enforce their demands.

NLRB refused to intervene in the situation because both unions and the contractor were under agreement to submit jurisdictional troubles to the Dunlop Board. This board had the dispute under consideration at the time, and later decided in favor of the carpenters.

The board relied on Taft-Hartley language which says NLRB should not decide a jurisdictional dispute where the parties have "agreed upon methods for voluntary adjustment." Agreement to abide by Dunlop decisions is equivalent to Taft-Hartley "agreed upon methods," according to the NLRB's interpretation.

• **New approach**—Manhattan then took another approach. It asked NLRB's general counsel to issue a formal unfair labor practice charge against the carpenters in spite of the board's refusal to do anything. The general counsel, George J. Bott, also refused because of the board's position. His refusal was not reviewed by the court, either, since Taft-Hartley gives the general counsel sole discretion on the issuance of unfair practice charges.

Manhattan apparently is stuck with the Dunlop Board settlement. It ruled in favor of the carpenters. But NLRB has not shut the door for Taft-Hartley relief should either party to a Dunlop settlement fail to abide by its terms. Such a case probably would get T-H treatment.

Since the Denver court did not pass on the merit of the board's Manhattan ruling, that policy stands. Considered with the recent ruling in the Empire State Painting and Waterproofing case (ENR July 24, p. 27)—that a contractor who hasn't agreed to Dunlop Board settlement is not bound by its decisions—what NLRB has done is to make clear that:

If you come under the Dunlop Board, that's where you must go.

If you don't, then NLRB will hear your case.

1-day inter-union strike halted by appeal to AFL

The latest of a series of union jurisdictional disputes which began last January at the Fairless Works of the United States Steel Corp. in Morrisville, Pa., ended one day after it started.

Members of Local 690, AFL Plumbers and Gasfitters Union returned to work following withdrawal of pickets from the plant gates. The picket lines had been set up the previous day.

The order to stop picketing was issued after officials of U. S. Steel and 22 contractors engaged in building the giant steel works demanded clarification of a regulation against such picketing made by the AFL Building and Construction Trades Council (ENR July 24, p. 21).

The request made to the council in Washington, followed an all-day conference in Trenton between company and contractor executives and resulted in an order, issued by the local, removing the pickets.

One choice lies between construction apprentice . . . or military service.

Military manpower gets shorter but apprentice program continues

In Washington this month, Selective Service Director, Maj. Gen. Lewis B. Hershey said that a resurvey of the draft pool shows a shrinkage in available manpower. According to Hershey, that means that draft deferments, already hard to get, will get tougher. And, says Hershey, deferment will have to revert to its original intention —at the most a temporary delay in filling service obligation (ENR Aug. 7, p. 33).

But despite the shrinking manpower pool, Selective Service is now issuing regulations covering deferment for apprentices. A number of trades apprentices in the construction field will be covered by these regulations. The Department of Labor is revising its list of critical occupations and each state Selective Service director will supplement this list with one covering his own particular area.

State Selective Service directors pass on apprentice training programs. Each program must have a sponsor—an employer, trade union, a joint-apprentice committee, committee, or an association of journeymen, or a group of employers.

To qualify, the program must offer training in a job which normally requires on-the-job training. It must also require 4,000 hours or more of work experience to get the skill related to the last occupation. The program must have been in operation for at least a year before it is considered qualified. Apprentices make requests for deferment on SS Form 171 to the local board. The applicant and his sponsor both sign and must show on the form that the program has been approved.

• **Manpower**—While Selective Service, on one hand, was expanding the deferment basis for apprentices, it was taking a second look at men who do not hold a critical occupation and have not yet seen active military service. The bottom of the available manpower barrel was in sight and local boards were beginning to look back to see who had been passed over.

At present the biggest available pool of draft eligible men is in the dependency-deferred bracket. About 900,000 men who would otherwise be drafted are now deferred for dependency reasons. It's almost a certainty that by the beginning of the year, Selective Service will ask the White House for an executive order to change draft regulations to permit drafting of men with dependents.

Chances are that the first to come under new draft regulations will be married men with one child.

Draft boards already have orders to screen deferred men and take a second look at the reasons for dependency deferment. Selective Service feels that there is a substantial number of men who have acquired dependents solely to avoid draft calls. These are generally single men who list one or two parents as dependent.

Biggest thing that most men deferred from service fail to realize is that once deferred, a man's liability under the draft act extends to age 35. Whereas, liability for men not deferred—and not drafted—ends when they reach their twenty-seventh birthday.

Contractors and unions hit by injunction suits

The government recently filed civil suits alleging monopolistic practices against plastering contractors and unions in Chicago.

The suits were filed by the anti-trust division of the Justice Department. The defendants had been named in two criminal indictments returned June 30 by a special federal grand jury (ENR July 10, p. 27).

The purpose of the suits is to get injunctions to halt a conspiracy to raise building costs by freezing out competition and foster monopolies in the trades, according to the government.

Lathing industry defendants are: Employing Lathers Association; its president, Harry D. Follett, and a member, Edward D. Chouinard; Local 74 of the Wood Wire and Metal Lathers International Union.

Bricklayer for brick is promised by Ohio union

A plentiful supply of bricklayers for the state of Ohio has been assured by action recently taken by the secretary of the State Conference for the Bricklayers, Masons and Plasterers International Union in Ohio.

Tom Davis, secretary of the conference, asserted that his union will furnish an adequate supply of masons for any current and future construction work in any part of the state of Ohio.

Mr. Davis said this action followed the announcement by the Canton, Ohio, office of the Structural Clay Products Institute that sufficient supplies of brick would be available.

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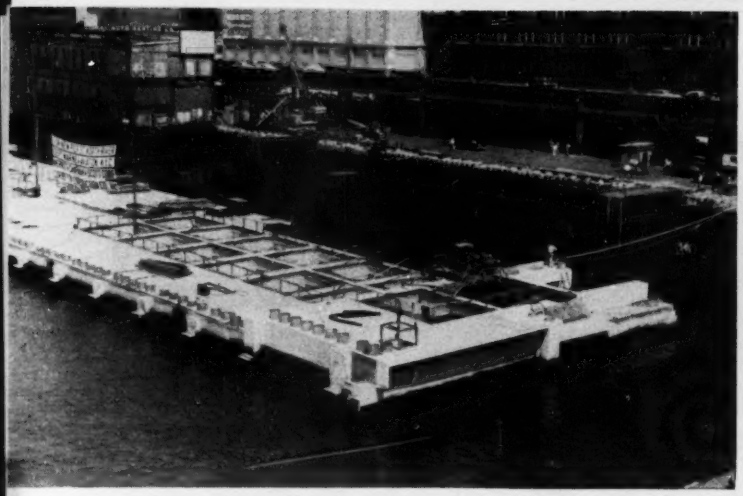
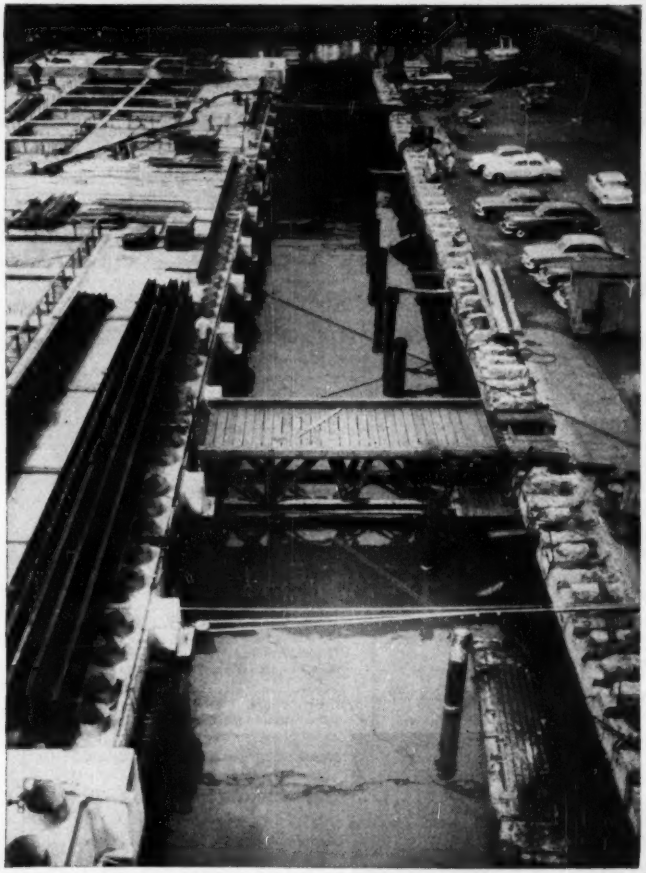


WAITING FOR SPRING TIDE to float it over bed of piles near the shore, Box No. 1 is moored in the river about 10 yd from the buffer piers which have been constructed to fend it off shore at the proper distance from the bulkhead line.

HOLD IT, signals John O'Donnell, surveyor for the firms building the project.



SNUG AGAINST THE FENDERS 20 minutes after the tide reached the 5.1-ft mark at the tide gages and held against the alignment marks of the piers.

Buffer piers set

Two hours out of the month isn't much time. But that two hours was all the time that Leonard Ott, project manager, had to position concrete pier Box No. 1, for Pier 57, North River, New York Harbor (ENR Aug. 7, p. 26).

The time to position was set by the spring tide, the highest tide of the month.

Only during that tide could the 13,800-ton, 367-ft Box No. 1—the closest to the bulkhead line and shore—be brought over a bed of piles and set in position. It had to be sunk within close tolerances.

Here's what would happen if the box was not in place within that two hours:

Two more concrete boxes, now resting in an artificial lake up the Hudson River at Grassy Point, N. Y., would have to remain there. The entire project—with all the resultant standby expense—would be backed up by a month or more, and Box No. 1 would still have to be watched and maintained as it floated within 10 yd of its eventual resting place.

So Ott, who is jointly employed by Merritt-Chapman & Scott and Corbetta Construction Co., Inc., studied the tide records very carefully. He found that his best—and perhaps only—chance would come on the night of August 4 at about 6:30 o'clock.

• **Positioning**—Box No. 1 had to be sunk in exactly the right place.

The ordinary way would have been to set the cluster piles in perimeter positions and by stringing a web of lines and cables, pull and haul and by "fuss and cuss" get it into position

ONE DOWN and two to go, for Leonard Ott, project manager for the joint venture.

Box No. 1

for sinking. But here again time—that short two hours—called for a better solution.

Ott then devised a couple of short fender piers or buffer piers extended out the right distance from the bulkhead line. The piers were sturdily constructed to take the impact of the big concrete pontoon.

A team of surveyors marked exact spots on the pontoon to correspond to cross-marks on the finger piers. Once Box No. 1 was tight against the marks it would be right, laterally and longitudinally.

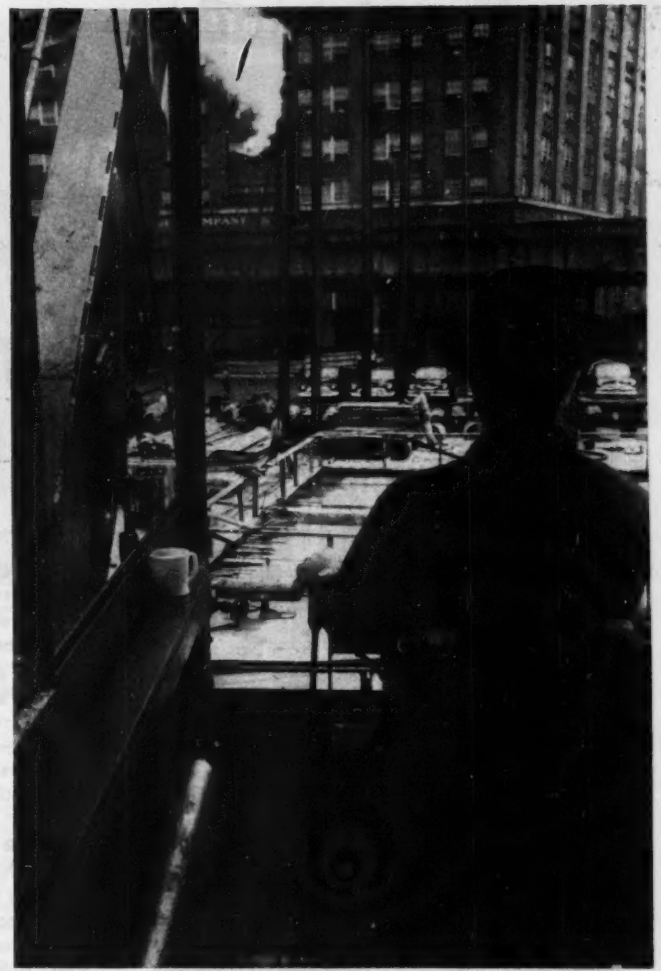
To move the box from its mooring, about 15 yards offshore of its intended position, two sets of rope cables augmented by steel safety lines were fastened to the shore and to a motor winch on the deck of Box No. 1. Another set of tackle was rigged for longitudinal motion if it became necessary.

• **The big move**—On the night of August 4, Ott and the rest of the engineering staff of the two firms plus the engineers of the Department of Marine and Aviation, watched the tide gages carefully.

"When the tide hit the 5.1 ft mark at about 6:10, we knew we were going to get our necessary tide," Ott said.

Ott gave the signal and the winches slowly and smoothly pulled the 13,800-ton concrete box toward the waiting buffer piers.

"Within 20 minutes we had the box filling with fresh water and it was in place," Ott said.



BUTTONING IT IN with 140-ft steel H-piles driven to rock or refusal through the sleeves on the perimeter of the box. The concrete pontoon is resting on a bed of old wood piles cut-off and level to within one-eighth inch tolerance.

• **Buttoning it in**—As the tide fell away it left Box No. 1 resting on a series of bents of old wood piles driven to rock in the river bed.

Now the task of driving H-piles through the sleeves on the perimeter of the box could begin.

The piles are to be driven about 140 ft to rock or refusal. Outshore the piles are being driven in one length, but inshore the piles are driven in 80 ft lengths and then spliced by welding for another 80 ft drive. (The inshore driving is harder due to river rubbish and the remains of old substructures in the area.)

After Box No. 1 is secured by means of the perimeter piles, the piles will be cut off in the sleeves three feet below the deck and the sleeves will be filled with concrete.

• **Coming events**—The remaining two boxes to be brought down to Pier 57 will be positioned by use of lines and cables and a set of cluster piles in perimeter position.

"Being offshore, in deeper water, the time element will not be so important," Ott said.

"Nevertheless," he continued, "we will still have the river currents, the wind and the tide to contend with in placing the boxes."

Ott is satisfied that, so far, things are working out quite well in this engineering adventure.

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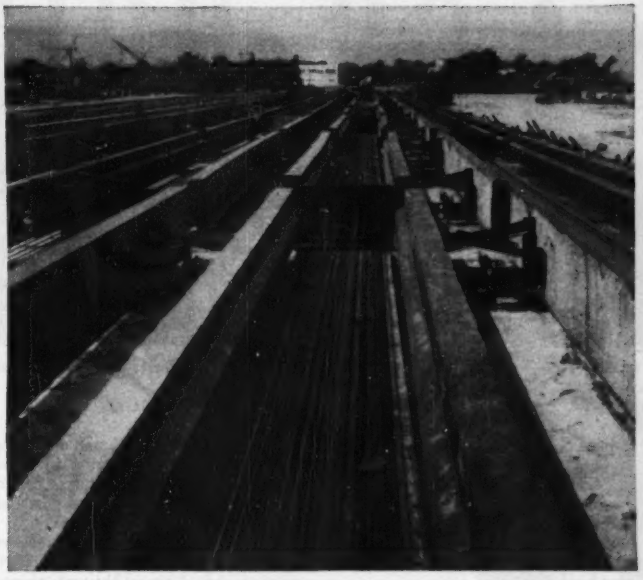


CONCRETE BEAMS 19 ft long are precast and prestressed on 350-ft long casting beds at Haverstraw, N. Y.

Prestressed stringers mass produced

FACTORY METHODS are being applied to the fabrication of prestressed precast concrete stringers for the deck of Pier 57 at New York, the substructure for which is now being floated into place. (See facing page and p. 36 of the July 31 issue). At Haverstraw, N. Y., where the contractors set up their plant for building the precast concrete caissons for the substructure, the 19-ft long stringers are being produced at a rate of 48 per day. Over 3,000 are required.

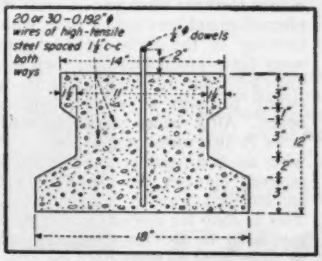
They will be placed side by side and will span between 2-ft thick girders spaced 20 ft on centers. Since the stringers are 19 ft long, there will be a 1-ft gap between the ends of members in adjoining spans. A 4-in. thick topping will be cast on top of the stringers to form the deck, and this concrete will fill the spaces between stringer ends.

Bent wires projecting from the stringer ends will dowel the beams to the topping there.

• **Composite construction**—I-shape in cross section, these beams are 12 in. wide. Webs are 11 in. thick. Bottom flanges are 18 in. wide, top flanges 14 in. wide. Weight per stringer is 3,500 lb.

Topping concrete also will fill the spaces between stringer webs and top flanges. Bent ½-in. round bars projecting 2 in. above the top flanges will dowel the stringers to the topping along their full length. Thus, the deck will be a composite slab consisting of prestressed stringers and nonprestressed topping.

• **Two types of prestressing**—A total of 3,148 prestressed stringers are required. A few, to be subjected to special loading conditions, will be prestressed by the Freyssinet method, two 10-wide cables in each being anchored at the stringer ends with conical concrete wedges. Most of the stringers, however, are being fabricated with the prestressing wires anchored by bond to the concrete throughout their length.



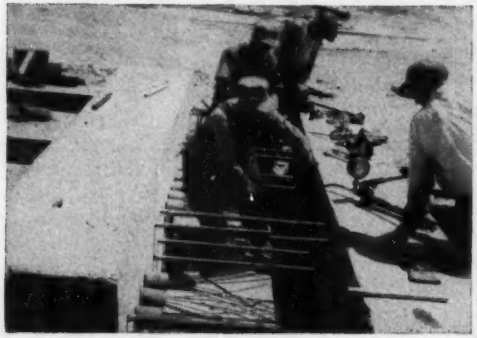
CROSS SECTION of all stringers is as shown, except steel area varies.

Of this group, 710 stringers, designed for a 300-psf live load, are prestressed with 20 wires, and 2,244, designed for a 600-psf live load, are prestressed with 30 wires—all 0.192 in. in diameter. The wires have a minimum ultimate tensile strength of 240,000 psi. Initial prestress is 160,000 psi and design prestress 137,000 psi.

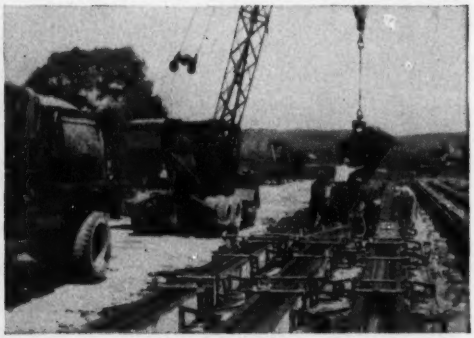
• **Tests check design**—Concrete for the stringers is required to have a 3-day compressive strength of 4,800 psi. It carries under initial prestress a compression of 190 psi in the top flange and 1,140 psi in the bottom flange. Under full design load, the top flange will be subjected to a compression of 930 psi and the bottom flange to 150 psi, while the upper surface of the topping will have 600 psi.

Low working stresses are used because of the engineers' desire to make the deck stiff. The high concrete strength was required to assure adequate bond with the wires.

To check the design, two stringers were tested to destruction. During the test, no cracks appeared until the load equalled dead load plus 3.1 times live load. Failure occurred in compression in the topping under a load equal to dead load plus 4.45 times live load. There were no signs of sepa-



HYDRAULIC JACKS drive conical plugs to anchor the wires. Abutments are made of prestressed concrete.



CONCRETE is placed in easily adjusted forms. After three days, the tension is released, wires cut.

ration of the topping from the stringers, however.

The test, therefore, verified the fact that prestressing of the stringers will keep the bottom flange always under compression. Thus, even under full live load, no cracks can develop, and as a result, the concrete should have a high resistance to salt-water attack. This is in addition to the economic advantages afforded by prestressed concrete, and a saving of steel.

• **Production procedure**—To mass produce the stringers with bonded wires, the contractor set up 12 production lines, each about 350 ft long, at Haverstraw. Each line is long enough to turn out 16 stringers. To permit multiple prestressing, the lines are grouped in sets of three, each group forming a casting bench, and the work is scheduled so that one bench of 48 stringers can be cast every day.

First step in the operation is to tension the wires. Next, the stringers are cast. After the concrete has attained sufficient strength, usually within three days, the tension is released and the wires extending between the stringers are cut.

• **Easily adjusted forms**—Bottom forms are plastic-coated plywood sheets, which are nailed to 2x4's. Set on a 7-in. thick concrete casting bed and aligned against wood guide blocks bolted to the bed, the 2x4's are free to slide on the concrete slab. This arrangement allows the stringers to move when the tension on the wires is released and they contract.

Side forms are made of concrete and are moveable. Angle brackets bolted to the outer face of the forms support and align them vertically. These brackets rest on greased 1-in. round pipes. To maintain alignment, three-sided tubular frames are set over the top of the forms, and wedges are inserted between the form sides and the frames. Stripping of the side forms is accomplished, after the frames are removed, with a lever arrangement acting against the angle brackets on the side forms and bolts cast in the bed.

• **Prestressed abutments**—At the ends of the casting beds are massive concrete abutments designed to resist the prestressing force applied to the stringers in each bench and to transmit the force to the casting-bed slab. Since up to 90 wires may be tensioned at a time, this force may be as much as 210 tons. It produces large bending moments in the vertical concrete jacking beams. To eliminate tensile stresses thus created, the abutments, too, are prestressed.

At one abutment, the wires for prestressing the stringers are anchored with conical wedges in groups of ten. At the other end, they are similarly anchored to a steel beam on flanged wheels. To tension the wires, the beam is moved about 24 in. away from the abutment with two 100-ton hydraulic jacks, the wheels rolling on rails to maintain the alignment of the steel beam.

• **How wires are tensioned**—A cycle of precasting and prestressing starts with cleaning of the forms. Prestressing wires for a production line then are unreeled from 20 to 30 coils on a rolling platform at one end of a bench. After being passed through holes in two metal spacer plates, the wires are tied together at 10- to 20-ft intervals between the plates as they are unreeled, forming a single cable. This is done for convenience in pulling them to the far abutment and to assure that all wires have the same length.

One spacer plate remains close to the near abutment. The second rides the top of the forms on a plywood sled as the end of the cable is pulled by an air-driven winch to the far abutment.

At that abutment, the wires are separated into three groups and passed through three holes in the vertical face of the abutment and an embedded steel distribution plate. Then they are slipped through three concrete anchorage cones. Finally, the wires are wedged in the cones with a conical plug, which is driven into place with a hydraulic jack.

At the other abutment, the wires, cut to a convenient length, are passed through holes in the vertical concrete face and anchored with concrete cones to the steel jacking beam.

When the wires for the other two production lines in the bench have been similarly anchored, tension is applied to all three lines of wires by jacking the steel beam away from the abutment.

• **Final Steps**—Next, the forms are positioned. Side forms are coated with castor oil while the wires are temporarily protected with a sheet-metal cover. Then, concrete is placed and vibrated.

When the concrete attains required strength, generally within three days, the tension on the wires is released. After that, the wires are cut between the stringers, which then are removed to a storage area.

Construction of Pier 57 is being carried out for the Department of Marine and Aviation of New York City by a joint venture of Merritt-Chapman & Scott Corp. and Corbetta Construction Co. The design was made by Madigan-Hyland, consulting engineers, under the direction of Emil Praeger. The Freyssinet Co., of New York City, are consultants on the prestressing.

HIGH UP

. . . on the list of "Economy Short-cuts" for the $4 Million Nassau County Sewer Expansion was . . .

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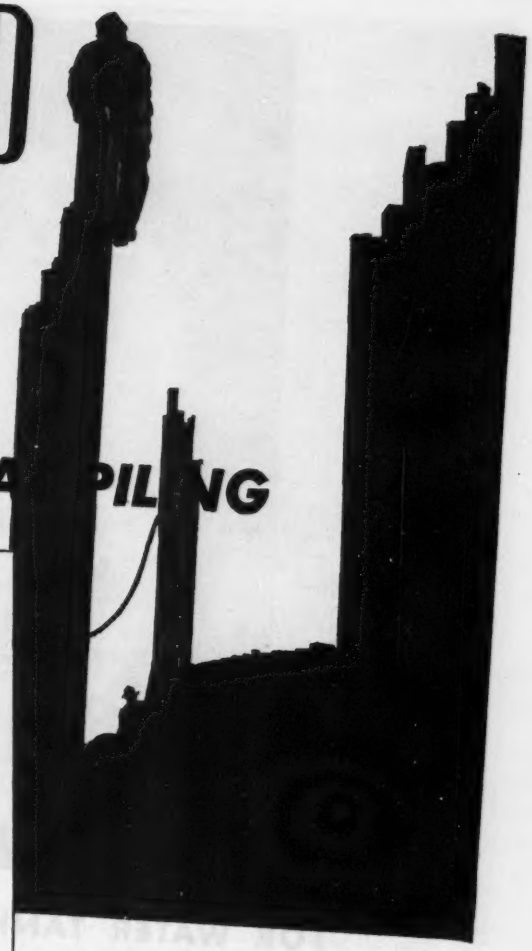

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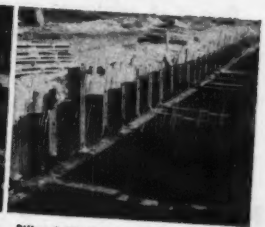
66-inch diameter precast conduit at an average depth of 35 ft.—placed atop a 7-inch concrete slab.



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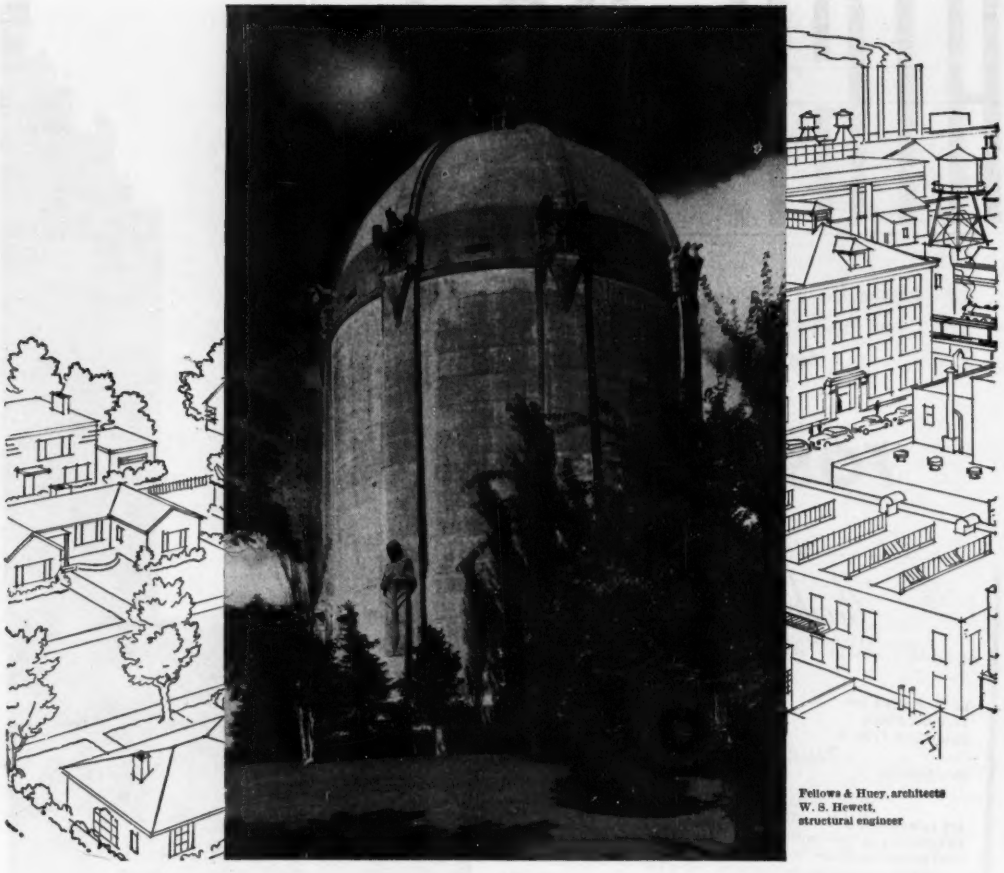

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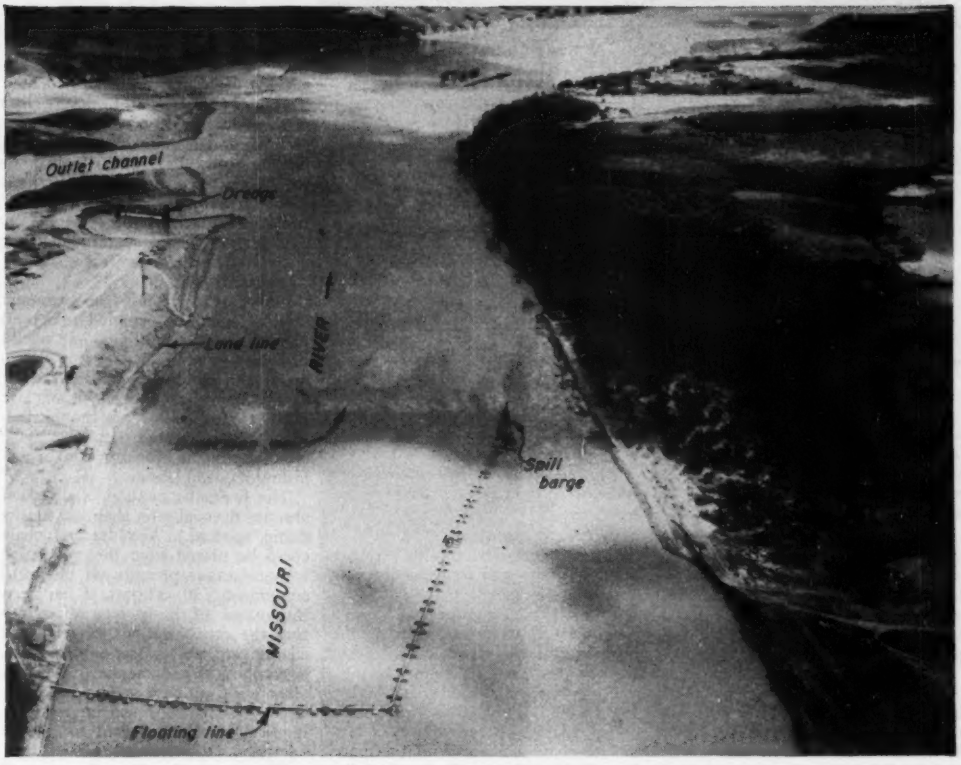


The Missouri River was blocked with a chalk-fill diversion weir, in . . .

Closing Fort Randall dam hydraulically

MAKING THE CLOSURE of a big earth-fill dam is the most critical stage in its construction. And when the river-flow is 30,000 cfs—as it was during the closure of Fort Randall Dam last month—it taxes the ingenuity of man and the capabilities of equipment.

Ordinarily, such closures are made either by the trestle-dump method, by cableway or by floating pontoon bridge.

But at Fort Randall the contractors and the Army Engineers threw away convention and closed the Missouri River by an ingenious method never before attempted on such a large scale.

It entailed the hydraulic placement of a combination sill-and-weir section of dredged chalk-fill on top of a previously blanketed riverbed, up to about 1-ft above river level—then building the diversion dam to a safe height with dump trucks.

• **Blanket, sill and weir**—The chalk blanket varies in thickness from 3½ to 6 ft, with its top at about El. 1,230 ft. The sill was built directly on top of the blanket, and the weir on top of the sill. The blanket, sill and weir were placed completely across the river channel, which had been constricted to a 1,000-ft width between opposite sections of main embankment. All material in the blanket, sill and weir was pumped into place by the 30-in. dredge Western Chief.

The 400-ft wide by 6-ft thick sill was placed with its upstream edge about 150-ft downstream from the upper edge of the blanket. It was built in 2-ft lifts and in continuous sections from bank to bank. These sections measured roughly 10 ft wide by 25 ft long, parallel to the flow of the river.

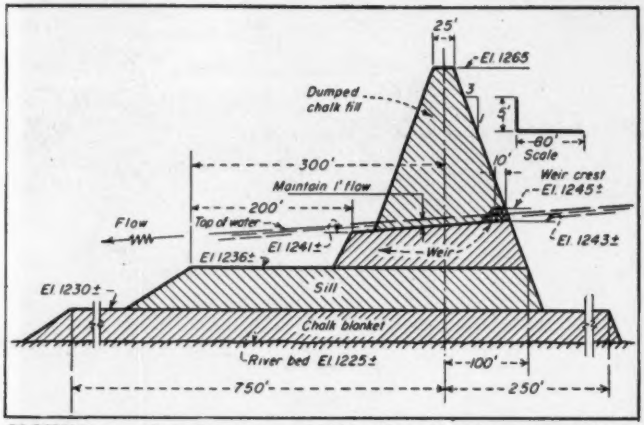
The weir was built in two sections: A broad-crested base 200 ft wide and 6-ft thick (average); supporting the final closure section, which was about 2 ft thick and 10-ft crown width. The base of the weir was placed along the upstream edge of the sill, and the closure section along the upper edge of the base.

The 6-ft base of weir was built up in continuous 18-in. lifts, with its top surface kept low enough to insure a 1-ft depth of flow over it until placing the final closure section.

Closure was officially effected at 1:10 pm on July 20, when the crest of the chalk weir broke the surface of the Big Muddy across the entire 1,000-ft width of channel. This forced the entire flow of the river through the approach channel, intake tower, flood-control and power tunnels, and out through the outlet channel.

Decision to make the closure hydraulically—rather than by time-tested methods—was made only after model studies had shown it to be feasible, and the contractors had demonstrated its practicability.

Through experiments and demonstrations by the contractors, performed



CLOSURE was made in three stages: A 1,000-ft wide by 3½ to 6-ft thick chalk blanket to stabilize the river bed; a 400x6-ft sill; and a 200x6-ft broad crested weir with a 10x2-ft crest section—all placed hydraulically. An additional 20 ft of dumped chalk fill was added by trucks to complete the diversion dam.

with their hydraulic chalk-placing equipment, their forces developed a degree of equipment control that was considered adequate by the Corps of Engineers for the close control required in placing the closure weir.

As a safeguard, however, materials for a timber trestle were stockpiled at the site to permit closure by the trestle-dump method in the event that the hydraulic method proved unsuccessful. Otherwise, closure might not have been made this year and an entire construction season lost.

• The theory of closure—The theory of making the closure hydraulically was simple. It was based on the principle of building-up first the sill and then the weir at a uniform rate along their entire 1,000-ft lengths. This would avoid any last-minute choking of the stream, with resulting scouring action or crevassing.

Laboratory experiments showed there would be three phases of the flow over the weir as it was being built under water:

For low elevations of the sill, the flow would be in the subcritical energy stage, and the velocity would be less than the minimum transporting velocity of the chalk. Incidentally, this so-called "chalk" weighs 130-lb per cu ft (wet weight).

For intermediate weir elevations, the river flow would be subcritical, and the velocity about equal to the minimum transporting velocity of the chalk. At the high elevations, the flow would be at the critical energy stage, and the velocity over the weir would be equal to the minimum transporting velocity of the chalk.

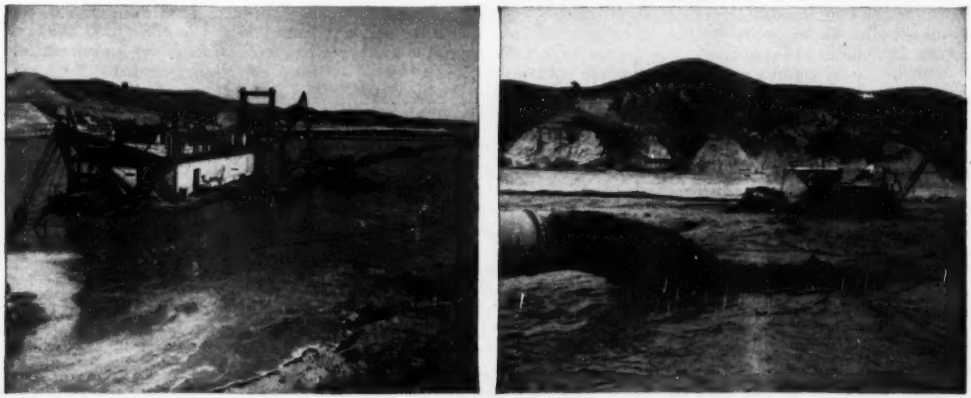
• Many advantages—The hydraulic method of making the closure had many advantages over the trestle-dump method. The trestle couldn't be built until the June rise had receded. Two weeks would be required for its construction, and it would be vulnerable to river drift. Moreover, wet weather would seriously hamper operations of the dump trucks hauling the chalk.

On the other hand, the hydraulic method could be operated under all likely weather conditions. It would permit a continuous rate of placement, and would not be affected by variations in river level. One big risk in the trestle method was the possibility of an unexpected high river stage either during its construction or following its completion.

The hydraulic method of diversion also was deemed safer than the trestle-dump method. The dredged chalk could be placed from the spill barge without undue pressure on men and equipment. In contrast, it has been the record of bridge-type diversions that the concentrations of men and equipment creates serious hazards, both physical and mental. Tensions often build up to a point where construction men and engineers work frantically without regard for proper safety.

Closure of the 28-million cu yd rolled earth embankment, in the $189-million flood-control and hydropower project, entered its final stages June 20. The crest of the annual spring high water from melting snow in the Rocky Mountains had passed Fort Randall on June 17 with a discharge of 61,000 cfs.

Receding river levels reduced the



DREDGE WESTERN CHIEF makes short work of plug-removal from the outlet channel (at left), depositing the material well downstream from the damsite (right). Bulldozer pushes fine material away from discharge so eddy currents won't undercut it.

flow to 50,000 cfs by June 22, and to 30,000 cfs—the maximum design discharge for making diversion—by June 29.

• **Closure timetable**—The closure timetable called for construction of the chalk sill under the weir to be started by July 3; the weir to be started by July 17 and completed by July 20. This schedule was followed very closely, the flow over the weir being shut off on July 20.

Dredging operations incident to starting the sill included removal of the downstream plug in the outlet channel from the powerhouse; and both the inner and outer plugs in the approach channel to the intake structure. This provided a free-flowing bypass, or diversion, of the river through the dam's twelve 22-ft power and flood control tunnels.

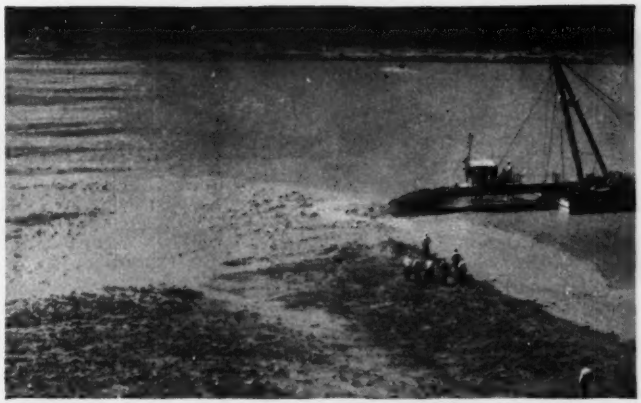
The contractors took no chance of their closure weir being over-topped by a sudden rise of the river, once it had been built up to about 1 ft above river level. A fleet of 50-ton end-dump trucks, together with conventional size trucks, started working around the clock to build the closure fill up another 20 ft, which was considered a safe height under any conditions. The trucks were loaded with chalk by an 11½ cu yd electric shovel. Top width of this permanent diversion fill covering the weir is 25 ft.

• **Pumped 18-in. chalk rock**—From a practical standpoint, the contractors took two important steps to insure the success of the hydraulic-closure method. They modified the dredge pump so it would handle pieces of chalk up to 18-in. in size. And they perfected their procedures of making the sill and weir during the placement of the chalk blanket.

The chief functions of this chalk blanket were to support the sill of the weir and to stabilize the sandy riverbed. Measuring about 1,000 x 1,000-ft, it extends entirely across the river channel, with its upper edge just downstream from the toe of the main embankment.

A small amount of the blanket was placed last fall, using chalk pumped by the dredge and deposited in place by a spill-barge.

As a result, the entire 1,000 x 1,000-ft blanket was completed between April 29 and May 22 of this year. During this period the river was flowing from 50,000 to 70,000 cfs. The blanket was placed on the river bed in a series of deposits measuring roughly 10 ft wide and 25 ft long (parallel to the river). Placement of the chalk progressed from one riverbank to the other, before moving up for the next series of deposits.



CLOSURE WAS MADE JULY 20—top photo shows conditions at 10:40 am that day and lower photo shows closure nearing completion only two hours later.

• **Trial run**—In putting down the upper 200 ft of chalk blanket the contractors decided to simulate actual conditions for building the weir later. In this operation it was necessary to vary the sideways movement of the spill barge at varying speeds depending on the production of the dredge and the amount of chalk needed to fill depressions and build the sill up at a uniform rate.

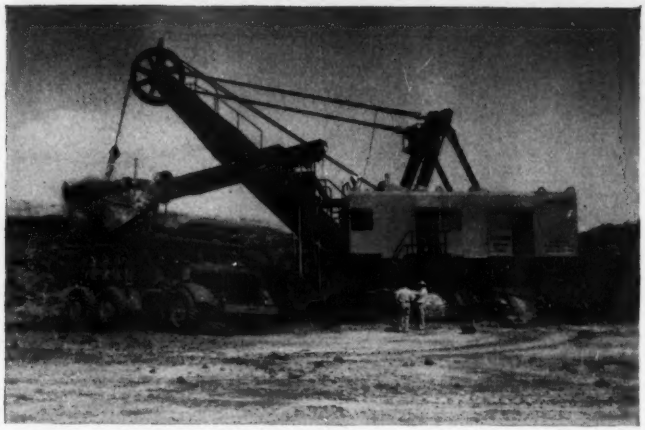
By modifying the system of winches controlling the spill barge and pontoon discharge lines, the transverse speed of the barge could be varied from 2 ft to 50 ft per min. This permitted the top of the sill to be kept horizontal, within a tolerance of 1 ft as it was being built up. In placing the blanket, the spill barge had traveled back and forth across the river at a speed of 50 ft per min; with stops of 3 or 4 minutes to place the 10 x 25-ft sections.

• **Dredge line stringout**—In placing the 6-ft thick sill and 9-ft high weir, the discharge line from the dredge was strung out in much the same manner as that used in placing the initial portion of the chalk blanket last fall (ENR, Feb. 7, 1952, p.38).

The dredge operated at a 200,000-cu yd stockpile of select chalk on the left bank of the river, previously excavated by land equipment. About 30% of the material passing through the dredge was larger than 6-in. A short length of pontoon discharge line fed into a long length of land line extending up the left bank of the river to well above the site of the sill and weir. It joined a pontoon line extending out into the river, making a right-angle turn, and extending 1,500 ft downstream to the spill barge.

Pontoon winches controlled the sideways movement of the downstream leg of the line as the spill barge was moved back and forth in a straight line across the 1,000-ft opening being closed. At the same time proper compensation up-and-down the river had to be made in the section of line connecting the shore line and the downstream leg to keep the spill barge from swinging in an arc across the river.

It took 666,000 cu yd of dredged



A MATCHED PAIR OF EARTH MOVERS: One of twenty 50-ton (pay-load) dump trucks and one of a pair of 11¼-cu yd electric shovels. Three bites of the big dipper made a load for each of the trucks.

material to place the protective blanket on the river bed and to build the sill and weir. Of this total, 288,000 cu yd of chalk and 123,000 cu yd of sand went into the blanket; 125,000 cu yd of chalk into the sill; 118,000 cu yd into the weir; and 12,000 cu yd of chalk into the diversion fill after closure had been made. An additional 60,000 cu yd of chalk was placed by dump trucks to complete the diversion fill.

• **Some big equipment**—Some idea of the magnitude of closure-making operations, including the remainder of stage III embankment, can be gained from the amount of heavy equipment. Dredging equipment included:

One 30-in. dredge (Western Chief)

One spill barge with one 3-drum and one two-drum winches, each having a 20,000-lb pull.

2,040 ft of 30-in. floating line.

2,300 ft of 30-in. shore line.

Five winch pontoons (one 2-drum @ 30,000-lb pull, and four single-drum @ 10,000-lb pull).

Two elbow pontoons, each with one-drum; 20,000-lb pull.

One anchor barge with a two-drum; 20,000-lb pull winch.

Two tugs.

One 8-station telephone system between spill barge, dredge and winch pontoons.

Major land equipment included:

Two 11¼-cu yd electric shovels.

Three 3½-cu yd draglines.

One 2½-cu yd diesel shovel.

Twenty 50-ton end-dump trucks.

Eleven 20-cu yd end-dump trucks.

Twelve 13-cu yd bottom-dumps.

Contract price for chalk-excavation—either by dredge or shovel-and-truck—is 54c per cu yd. Unclassified dredging is 28c per cu yd.

On dredging work prior to making the closure, the Western Chief had marked up a record of 52,000 cu yd of material in 24-hr, through 4,500-ft of discharge line. In making the closure, however, it moved about 20,000 cu yd per 24 hr.

The 11¼-cu yd shovels and 50-ton trucks made a matched pair for excavating the chalk and placing it in the embankment.

• **Powerful electric shovels**—Electric power for operating the shovels comes from a 4,160-v high-line, plus a 1,000-kw generator operated at the damsite to smooth any bumps out of the commercial line when both shovel operators hit their controls at the same time.

Principal features of the shovels include a 187.5-hp hoist motor, two 62.5-hp swing motors, and one 62.5-hp crowd motor; all operating on 220-v. The shovel booms are 40-ft in length and the dipper-stick, 28 ft. Crawler tracks are 26 ft long and 55-in. wide.

Each shovel has 1,000 ft of trail-cable running to a transformer station at the edge of the excavation. This 5,000-v cable is No. 2/0, three-conductor, with each conductor made up of 259 strands. Each conductor in the cable is sheathed, and the entire cable is insulated in such a manner that it will immediately ground-out in the event it is accidentally cut.

• **Gigantic trucks**—Each of the big end-dump trucks weighs slightly over 50 tons empty, and can handle a 50-ton pay load. They averaged five loads (28-cu yd) each, per hour, on a 2.8-mile roundtrip haul to the damsite.

The trucks are powered by twin 300-hp diesel engines, with torque converters. They have hydraulic booster steering and hydraulic hoist pumps for dumping. One engine drives the forward axle and the other drives the rear axle, of the twin-axle rear drive. Each truck mounts ten 32-ply 18.00 x 33 tires—four on each of the rear drive axles and two on the front axle. The trucks cruise at 20 to 22 mph, either empty or loaded.

• **Post-closure operations**—Next operation in the closure schedule will be to build a sand-fill dike, with end-dump trucks, across the channel along the upstream edge of the blanket. The upstream face of this dike, which will be built up several feet higher than the sill, will be blanketed with chalk.

At the same time the Western Chief will start pumping sand from the river channel below the damsite into the base of the closure section of the main embankment. About 1,000,000 cu yd of dredged sand will be needed to build this closure section up to 2 ft above water level.

Land equipment then will take over, placing impervious material in the embankment up to El. 1,325 ft which is considered a safe height for passing next year's spring flood. This calls for the placement of a total of 4,500,000 cu yd of main-embankment material before this winter's freeze-up, expected about Nov. 15.

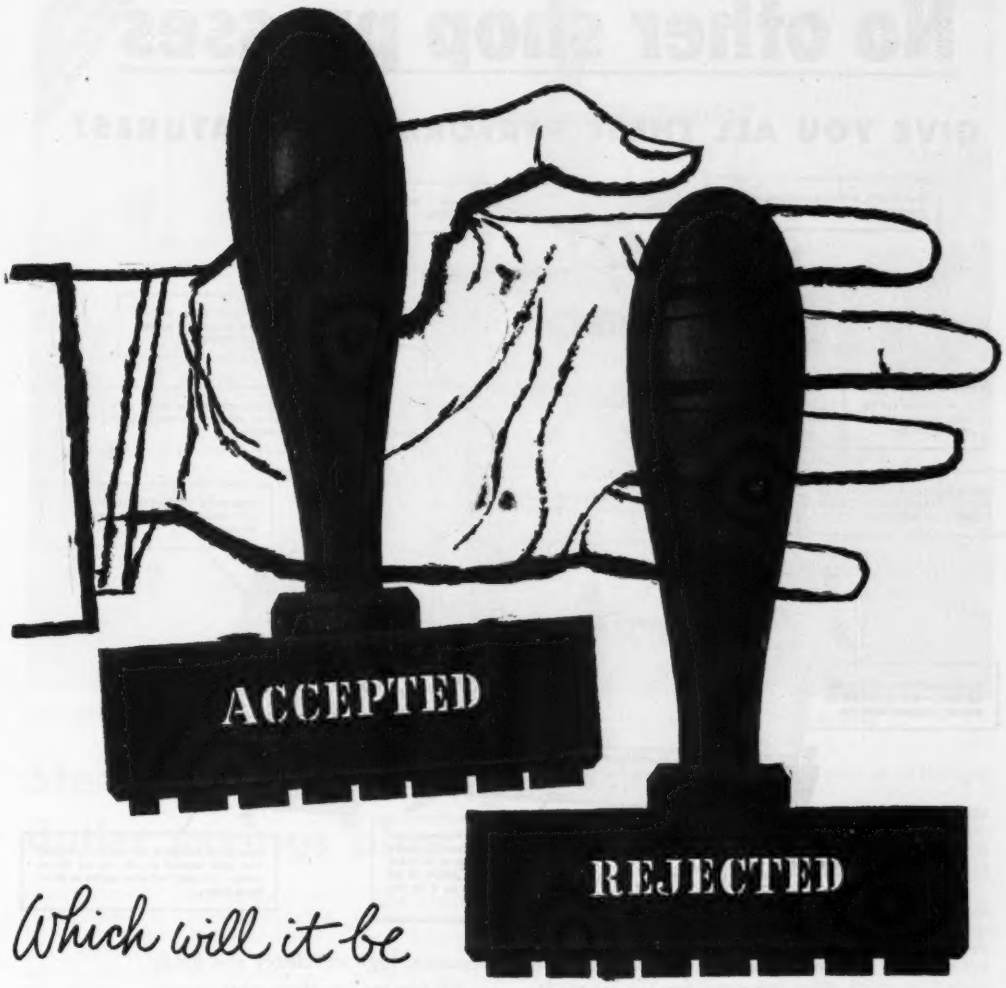
The contractors are hoping for a dry fall, since wet weather would seriously curtail operations of their big dump trucks, and permit their earthmoving to get behind schedule.

• **Contractors and engineers**—Making the closure at Fort Randall dam is part of a $7,209,000 contract held by the Western Contracting Corp., Sioux City, Iowa, for stage III embankment, scheduled for completion Mar. 1, 1953. L. G. Everist is project manager; Carl Collins, general superintendent; and Herman Holderby, master mechanic.

Fort Randall dam and powerhouse is being built by the Omaha District, Corps of Engineers, under the supervision of Col. Henry J. Hoeffer, district engineer, reporting to Brig. Gen. Don G. Shingler, Missouri River Division Engineer.

George O. Evans is area engineer, in charge of the entire project. Charles R. Brown is construction engineer; and B. M. Babb, resident engineer on embankment.

Model studies on the hydraulic method of making the closure were conducted by Lorenz G. Straub, director, St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.



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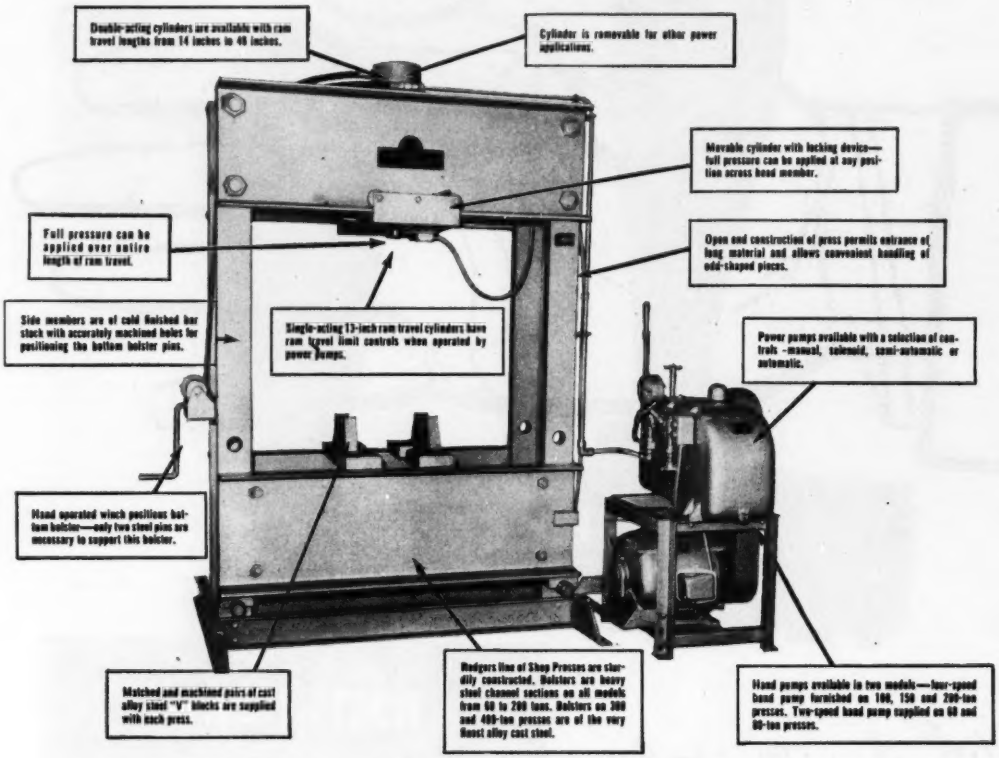
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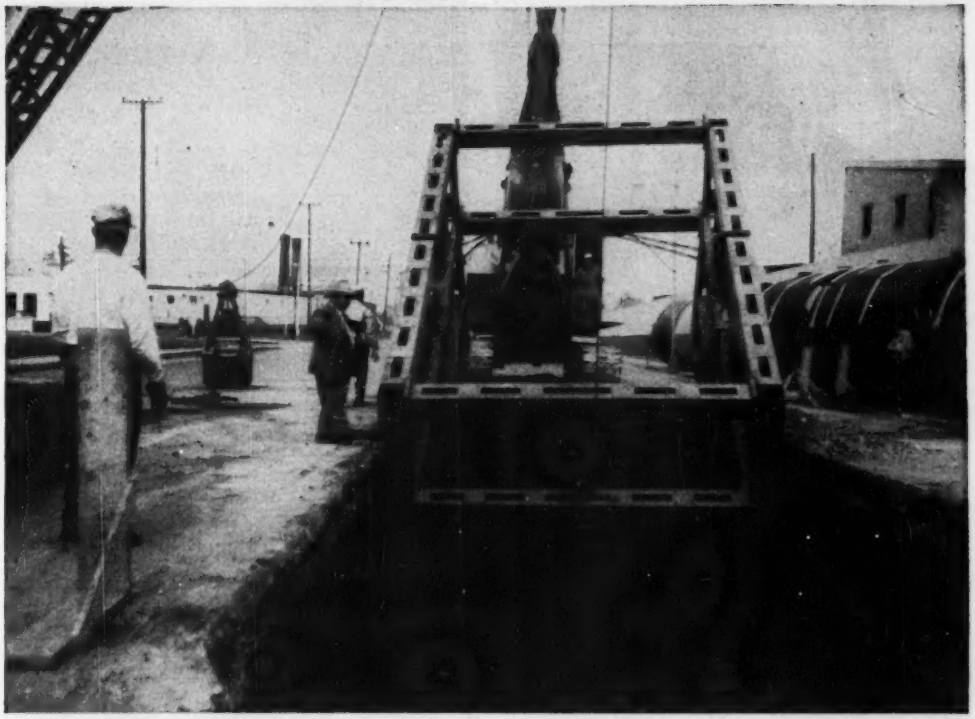


PREFABRICATED SHEETING is lowered into sewer trench that was started by backhoe shown in background.

Steel trench sheeting nets dollar savings plus safety

STEEL TRENCH SHEETING—prefabricated, adjustable, and easily unbolted for shipment—is saving Burch & Haddad Construction Co., of Columbus and Dayton, 50% of the time and money cost of conventional wood sheeting on a sewer pipe-laying job in Middletown, Ohio.

S. S. Haddad, inventor of the arrangement, feels its biggest single advantage is added safety to his men working in the trench. He says he gets more work out of them because of their complete confidence in protection afforded by the steel—even as compared to a good job of wood trench-sheeting.

In effect, the prefabricated section of sheeting is an open-ended caisson, set in place on the ground, then lowered by the digging. It is trucked to the job and assembled for use on the site. The crane there to excavate the trench can first put the device in place.

The particular job on which the sheeting is proving itself is a trunk sewer contract. On 11,575 ft. of trench excavation, ranging in depth to 24 ft, the Haddad forces have laid some of the largest diameter corrugated steel pipe ever made—102-in. corrugated asbestos-bonded. And there are juncture chambers of cast-in-place concrete.

The steel sheeting has been used throughout the job on straight-away lengths of trench digging.

• **How it's used**—On this job—about 80% street excavation—a backhoe goes ahead, digging up pavement and starting the trench. The 20-ft long steel sheeting is then moved ahead by crane, and excavation is finished by clamshell, the sheeting settling down into the trench as it is excavated, in a manner similar to the settlement of bridge-pier caisson.

When invert grade is reached, the crane lowers into place an 18-ft length of pipe.

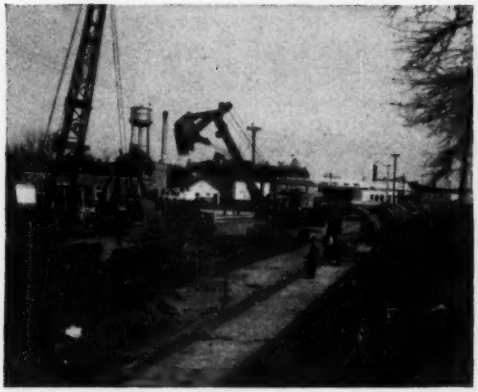
Men working within the protection of the sheeting, set the pipe and complete the joint; the sheeting is moved ahead and the length of pipe just laid is backfilled.

Four years ago S. S. Haddad built a trench-sheeting box similar to this one in timber. But the lumber wasn't sturdy enough for rough treatment the box got on the job. Using steel plate, angles and H-beams, he now has a box easily handled by crane when assembled and quite portable by truck when disassembled. He has made patent application.

Length of cross-bracing used is determined to suit desired trench width, depending upon diameter of pipe being laid. The lower cross-trench bracing is high enough to clear large diameters (witness the record 102-in. corrugated pipe on this job).

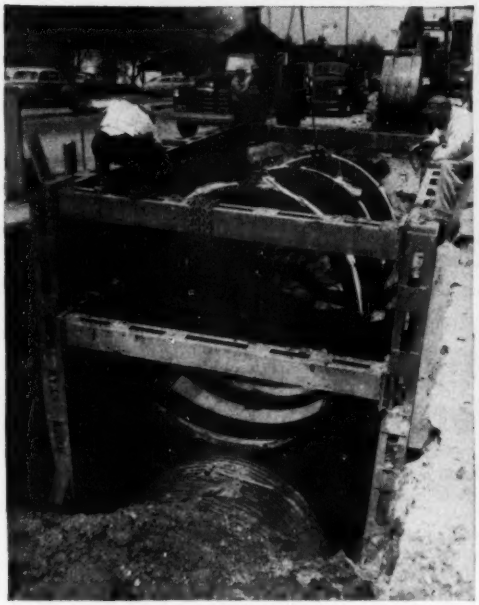
• **Unusual outfall**—Instead of the more normal reinforced concrete structure, corrugated steel has been used right down to the outfall on this project.

Two concrete footings were poured, and to these was tied a 120-in. di-

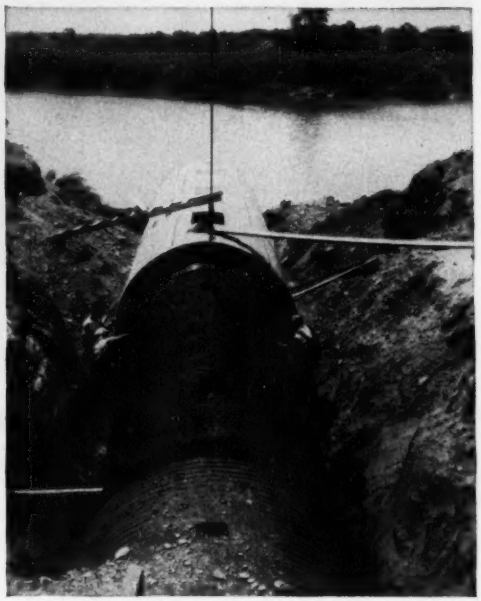


LIKE AN OPEN CAISSON the sheeting box sinks in the trench as clamshell excavates inside it.

RECORD-SIZE corrugated steel pipe (102-in. diameter) is used on this Middletown (Ohio) job.



LOWERED INTO SHEETING the pipe is set and jointed by workers secure against trench failure.



WEIGHTED OUTFALL—instead of being reinforced concrete—has a grout-filled sleeve of corrugated-steel plates.

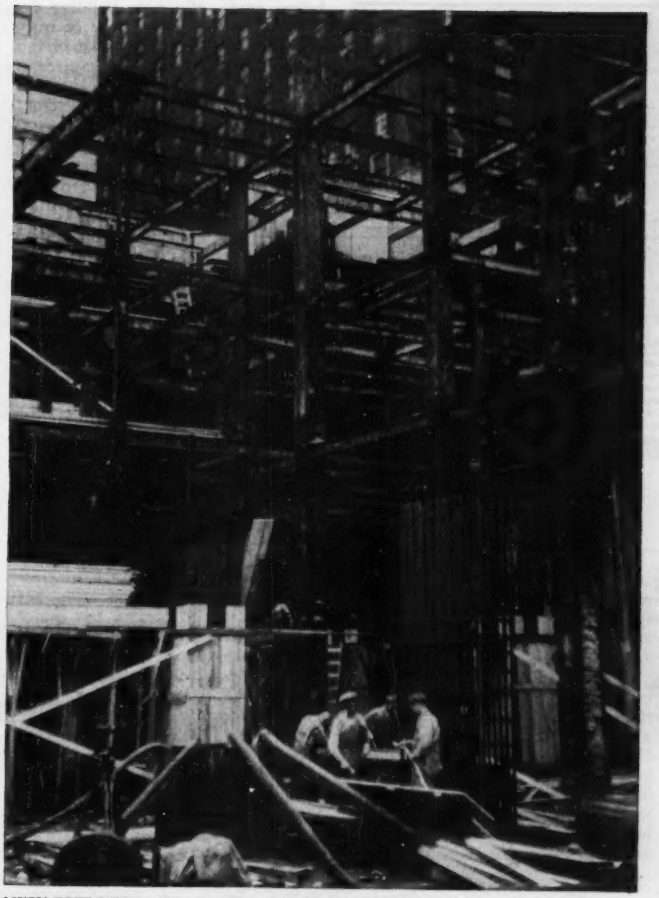
ameter pipe, 32 ft long, of built-up steel section (Armco Multi-plate pipe was used). Into this length was threaded a 102-in. diameter pipe, then the annular space between was filled with grout.

The outfall is expected to be used continuously only until completion of a planned sewage treatment plant. After that, a built-in regulator will permit it to pass untreated sewage only in periods of peak flows.

Present sewer relief work is but $1¼ million work of an ultimate $7½ million project for the City of Middletown. Construction of the sewage works is due to begin late this year, with completion in 1954 anticipated. In the meantime, other interceptor sewer contracts remain to be let.

Present work, first major sewer construction for Middletown in 50 years, includes three lengths of tunnel. The first, now completed, was 68 ft long under Pennsylvania Railroad tracks: 96-in. corrugated steel pipe threaded then grouted into 108-in. diameter liner plates. Similar lengths of the same section have yet to be tunneled under Baltimore & Ohio and New York Central tracks crossing the sewer's line.

Construction began on the project the first of this year. City Engineer Roy Pochel was responsible for the design, which was reviewed by Middletown's consultants, Floyd G. Browne and Associates, of Marion, Ohio. F. R. Loomis is resident engineer for the consultants, and S. S. Haddad is on the job for contractor Burch & Haddad.



NEW BUILDING? Yes, but there'll be concrete in place of this old frame. Basement, which is 45 ft deep, extends out under sidewalk.

Deep basement wall shored by old steel as office building replaces the Ritz

WHEN the New York Ritz Carlton Hotel died it died hard.

For many weeks after a new office building began to rise out of deep cellars that had enclosed vintage wines and other appurtenances of elegance, the steel framework of those cellars remained to haunt aristocratic mourners—and to keep two streets from falling into the hole.

The plan was to wreck the old structure completely, keeping only the original basement wall, then erect a 25-story building on the site. Below ground level the new structure would be of reinforced concrete; above, structural steel.

The site fronts a full block on an avenue (200 ft), and extends 240 ft back along one side street and 140 ft back along the other.

A substantial part of the existing cellar was 45 ft deep, extending out under the sidewalk and into the street. This condition prevailed on about half of the avenue side and on the adjacent side-street side. The rest of the site was about 20 ft deep, involving no unusual ground-support problems.

Foundation walls in the deep portion were brick curtain walls (backed by rock) in their lower half, and concrete retaining walls in their upper half. They had been designed as panels for lateral support by the cellar's steel frame.

If the cellar frame had been wrecked completely, a complicated and expensive system of bracing would have been required in the deep section to hold the walls and sidewalks during concrete construction.

Frame stays in—But designers saw a chance to save most of the bracing expense. Analysis of existing cellar steel showed that three bays of old steel would provide enough lateral support. Moreover the steel would interfere with new concrete in only a few places. These places included five columns and the floor first above cellar ground level. The new structure has wider column spacing and different floor heights to accomodate new functions, particularly a 400-car garage.

Here is the step-by-step method of procedure:

Step One—Remove all cellar steel but three bays along the two deep walls. Strip concrete floors in the bays retained.

Step Two—Shore up foundation wall below existing cellar mezzanine. Underpin five interfering columns and remove portions below existing service floor level. Brace remaining columns and remove floor beams at existing service floor level.

Step Three—Pour third and second sub levels.

Step Four—Carry up underpinning for five interfering columns and remove portions below existing kitchen floor level.

Step Five—Pour first sub level.

Step Six—Shore up foundation wall below sidewalk level and provide temporary sidewalk framing at first sub level.

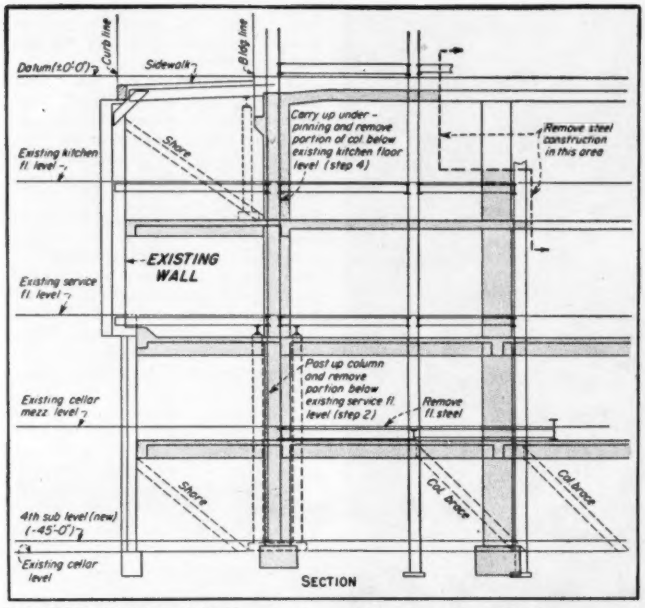
Step Seven—Remove remaining columns and floor steel.

Step Eight—Pour first floor, including new sidewalk slab to brace existing retaining walls.

• **Column support**—The method of underpinning the interfering columns was conventional. Needle beams were welded to two sides of a column at a level above the intended point of cut-off. Four heavy timber shores, supporting the two ends of each beam, were set on mud sills at grade. Shore spacing was sufficient to allow access for column-footing excavation, as well as for new-column construction.

Where new concrete floors intersected existing steel columns, small wood sleeves were built on the forms, around the columns. When the steel was removed later, the holes were filled.

More than eight months have



TO HOLD WALL 45 ft high, contractor used three bays of original basement steel. It is removed as concrete construction (shaded) rises. Where new column locations coincided with old ones, they were posted up and removed.

passed since the wreckers turned the building site over to the general contractors. Only now is the last of the old steel coming out, so, as mentioned above, it's been a slow death for the old building.

The Ritz-Carlton Hotel was built shortly before World War I. The hotel proper occupied the new-building site's deep portion. In addition there was a second building, somewhat newer, that constituted the Carlton House, a high-class apartment hotel. For the most part the second building covered the shallow part of the old excavation. While there has been some new excavation, and a few new column footings have gone deep below grade, the new building involves no significant change of basement space, compared to that of the two old ones.

Site rock is mostly Manhattan schist, heavily faulted and therefore touchy stuff to deal with. Several column footings had to be carried quite deep to find good bearing. For instance, in a corner of the deepest cellar, the new footing goes down 18 ft. That's 63 ft below the street. And a row of footings in the shallow portion, alongside the deep portion, goes at least below the adjacent 45-ft depth. That's a 25-ft pit to dig before the search for good building-support rock begins.

Fortunately the rock bears little water, so dewatering was not a serious problem.

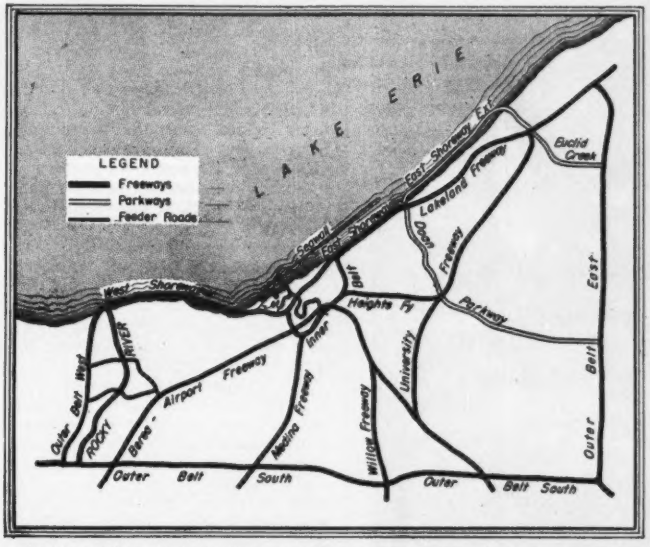
Another difficulty that the designers had to cope with was faulty knowledge of the old building's structural layout. Available copies of the original plans were not accurate in all respects, nor did they give full data for estimating the condition of structural elements. Doubtless alterations subsequent to original construction contributed to this situation, but the effect was to force a few minor changes, in both field procedure and structural layout of the new basement concrete.

In charge of structural design was James Ruderman, New York consulting engineer. He served Emery Roth and Sons, architects. General contractor is Cauldwell Wingate Co., New York, whose general superintendent is Samuel Weston. Bernard Rosen is contract manager. Owner is Uris Bros., of New York.

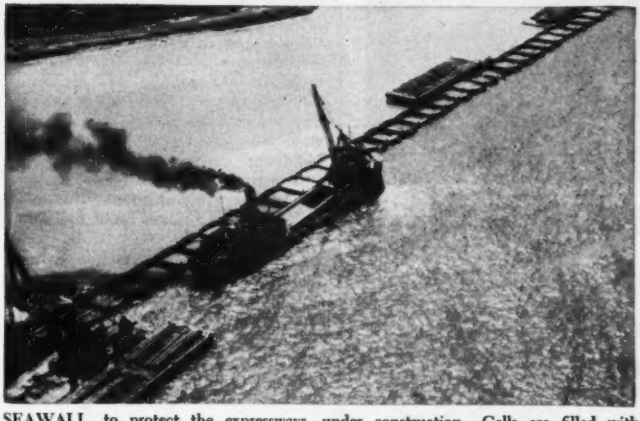
COLUMN BRACE and shore replace function of lowest horizontal steel because it interferes with the location of the third sub-floor.

WRECKING proceeds right along with new concrete work. Here, 40-year-old brick fireproofing is knocked off a column, which continues to act as bracing.

COLUMN remains temporarily in place. It will be boxed at floor level during concrete placement. Later it will be removed and the hole filled.



EXPRESS HIGHWAY PLAN for the Cleveland Metropolitan area. The map shows the principal freeways, parkways and feeder roads for the downtown area.



SEAWALL, to protect the expressways, under construction. Cells are filled with concrete. Effectiveness may be judged by relative calm water on the inside.

Cleveland freeways make progress

Center lines have been established for about $110 million worth of Cleveland's gigantic freeway system, Louis L. Drasler, division engineer for the state highway department, recently reported.

But the supply of funds for the project, financed by the federal government and the state with city and county participation, has not kept pace, he asserted. "The money comes in in trickles."

Another problem, Drasler said, is the shortage of engineers who have gone to the higher-paying positions in private industry. "Some of my boys are working nights and Saturdays. But, give me the money and I'll get the engineers somewhere.

Two strikes hit the project during

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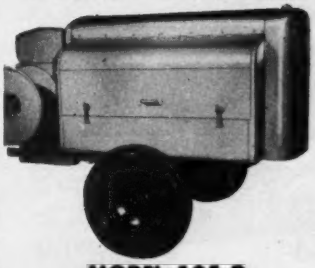

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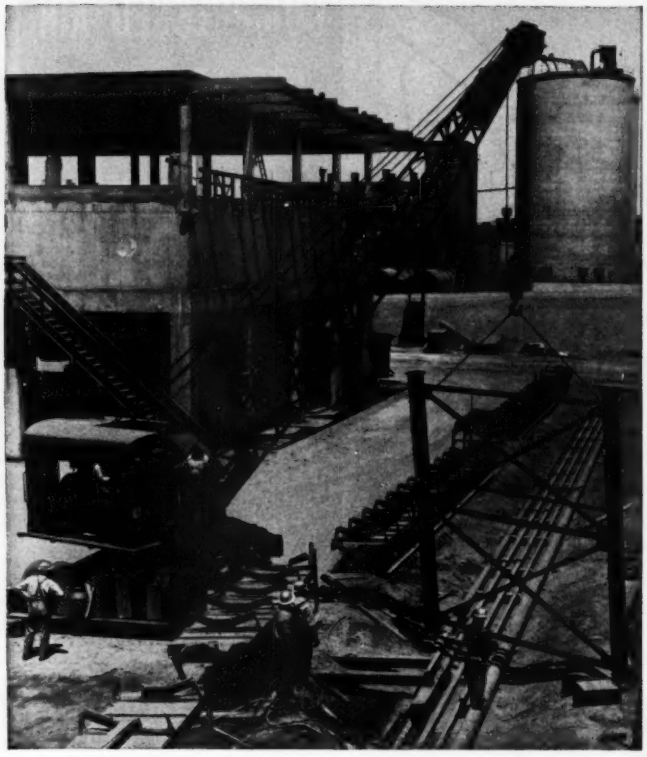

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the good building weather. First there was the steel strike. Then there was a 28-day walkout by the local building material drivers.

On the brighter side of the freeway picture are these items:

• Long-awaited federal approval came for a bridge across the Cuyahoga River valley. The eight-lane span, measuring 2,718 feet from abutment to abutment, is one of the most important structures in the 90-mi freeway system.

From center to center of trusses it will measure 90 ft, 4 in., with an overhang varying from nine-foot to 15-foot.

Drasler hopes to let contracts for piers this winter. Estimated cost of the job is $32 million.

Before approval came, about 100 pages of plans were thrown out. The span is part of the inner belt freeway and extends from W. 14th street and Abbey Ave. to E. 22nd Street and Cedar Avenue.

• **Willow Freeway**—Nearing completion is the four-and-a-half-mile Willow Freeway. Part of it is now being used. In this project Drasler noted an interesting comparison in costs.

A cloverleaf at the southern end of the freeway was started in 1937. The interchange with seven structures was built for $1.6 million with $87,000 for right-of-way. He recalled that it was the first cloverleaf built in the state and was regarded as a "Rube Goldberg" contraption.

Construction of the last mile of the Willow will cost about $1.25 million with $1.7 million spent for right of way.

Cleveland's Chester Avenue Extension, a controlled access thoroughfare on the city's east side, was likewise more expensive in right-of-way costs than in construction. To build the 1.58 mi. of divided roadway cost $700,000. Right-of-way through the populated section came to $2.4 million.

• **East Memorial Shoreway**—Construction of the East Memorial Shoreway is going right ahead. A 2,300-ft. seawall, from the foot of E. 70th Street, is expected to be finished in August. The wall is to protect fill for the proposed eight-lane shoreway.

A contract has been awarded for a 3,444-ft. wall from the foot of E. 55th Street to E. 70th Street. A low bid of about $2 million was well under estimate of $2.2 million.

On Aug. 12 more than $3 million in bids was let for a directional inter-

(*Continued on page 51*)

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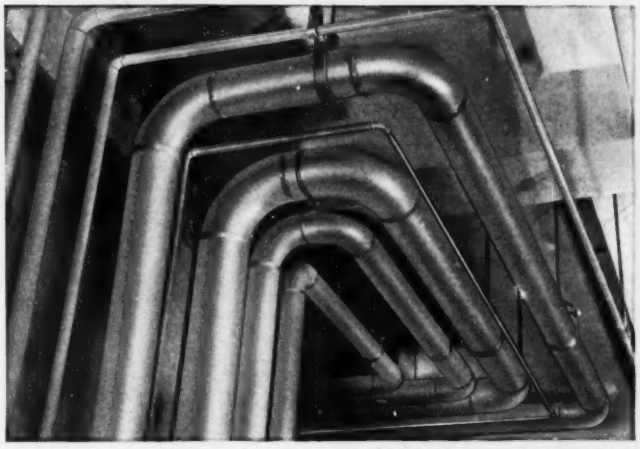
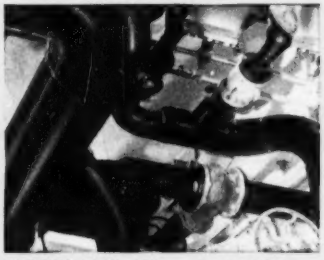
ALUMINUM COMPANY OF AMERICA'S new 30-story office building in Pittsburgh is a pacesetter for construction ideas. Exterior walls are made of sheet aluminum. Windows pivot on vertical axes to simplify cleaning. Radiant heating and cooling panels in ceilings increase rentable floor space.

In keeping with this progressive design, a welded piping system, using TUBE-TURN Welding Fittings and Flanges, was specified. Thus piping, both aluminum and steel, will be leak-proof and maintenance-free. The variety of welding-fitting requirements posed no problem, since TUBE TURNS, INC. offers the world's broadest line of welding fittings and flanges—available in a wide range of types, sizes, and more than 40 different metals and alloys.

Alcoa's new office building. Architects: Harrison & Abramovitz. Assoc. Architects: Mitchell & Ritchey and Altenhof & Bown. Heating, Ventilating & Air Conditioning Sub-Contractors: Dravo Corp.; Plumbing Contractors: Sauer, Inc.



Corrosion-resistant aluminum lines for drinking, and hot and cold water supply saved critical copper. Note how welded lines, from 1" up, are fitted closely together, make for a neat installation. These lines will be insulated.



TUBE-TURN Welding Elbows, Tees, and Reducers used in steel piping for steam and hot water lines in basement. True circularity and uniform wall thickness of TUBE-TURN Welding Fittings expedited installation by insuring accurate fit.

Eight-inch steam line with 2" and 3" branches in fan room on roof. Use of welded system, with TUBE-TURN Welding Fittings, simplified piping design, gives streamlined appearance, eliminates maintenance problems.

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224 East Broadway, Louisville 1, Kentucky

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Position .....

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"tt" and "TUBE-TURN" Reg. U.S. Pat. Off.

TUBE TURNS, INC.

LOUISVILLE 1, KENTUCKY

change with marginal roads at the foot of E. 55th Street on Lake Erie.

• **Lakeland Freeway**—Now being used by the public is the partially completed Lakeland Freeway, opened to traffic in 1949. It has six lanes with an island in the middle making an additional two lanes possible. It was built for $3.6 million with $1.5 million spent for right of way.

Embarrassment has been occasioned by "scandals" in the local newspapers over building in the path of the proposed freeways. THE CLEVELAND PRESS on July 28, 1952, asked editorially: "What's happened to proposal for Freeway Location Bureau?"

It commented: "With expensive regularity, the public is paying the price for the silly and inexcusable confusion that still exists over the exact locations of new freeways.

"The latest episode is occurring out in Parkview, where a man who's building six greenhouses learned, to his dismay, that they probably are directly in the path of the proposed Brookpark Dr. extension.

"No one can tell him positively that the extension will cut through his property.

"So his attorney could only advise him that he had better stop work, although two foundations already are in, and see if he can't find some other locations."

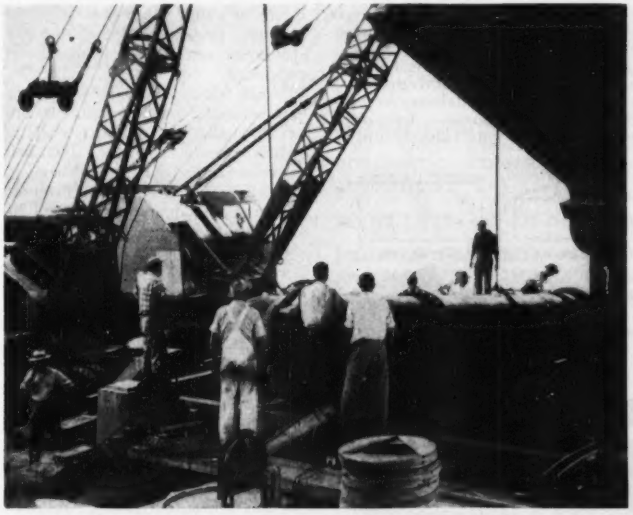
The editorial also asked what had happened to a proposal made by Cleveland's mayor, Thomas A. Burke, for the establishment of a Freeway Bureau to fix exact center lines and assure that the city of Cleveland and its suburbs know where the lines are.

Pipe crossing river to end dumping

Biggest job in connection with construction of an $18 million sewer project at Portland, Ore., was begun when workmen lowered onto the bed of the Willamette River a 12-ton section of a 42-in. pipeline. It will carry sewage from the city's main business and industrial area on the west side of the river to interceptors on the east side, then to a new disposal plant on the bank of the Columbia.

This pipeline, and a 30-in. companion, will connect pumping stations on the east and west sides of the Willamette, which runs through the heart of the city. The two lines will have "ball and socket" joints in every six lengths to provide flexibility. They will be lowered into a single trench cut in the bed of the river 60 ft below the surface at its greatest depth. Length of the pipeline will be 1,800 ft, 1,200 ft of it will be under water.

Completion of the project will end dumping of sewage into the Willamette River.



LOWERING INTO PLACE a 12-ton section of 42-in. steel pipe, first link in a sewage pipeline to be laid under the Willamette River, connecting east side and west side systems of Portland's $18 million sewer project.

Scottie "Construction Expert" McBlock approves a combination of superior features.
McKISSICK
Steel Shell
Manila Rope
SNATCH BLOCK
With pressed rounded edges, prevents chaffing of your line.
★ Handy Drop Link design permits easy insertion of rope.
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selected a
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RIGID FRAME BUILDING because . . .
"It solved our special problem and gave us more room for overhead crane operation."

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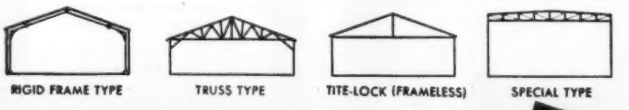
For maximum economy and efficiency, call in STEELCRAFT at the earliest possible planning stage. That's when STEELCRAFT engineers can make proper recommendations, complete suggestions, together with preliminary estimates or definite quotations —BEFORE the job starts.
STEELCRAFT'S fully integrated manufacturing operations provide a continuous flow of standard parts, including doors, windows and other primary accessories assuring delivery of the complete building on time...from one source and with one responsibility.



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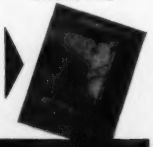

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MUNICIPAL

Municipal plant financing vetoed by Florida court

Florida's Supreme Court recently turned down North Miami's plans to float revenue bonds to finance construction of industrial plants in its municipal area.

In its opinion, the Florida court pointed out that "every new business, manufacturing plant or industrial plant which may be established in a municipality will be of some benefit to the municipality.

A new super market, a new department store, a new meat market, a steel mill, a crate manufacturing plant, pulp mill or other establishments . . . may be of material benefit to the growth, progress, development and prosperity of a municipality. But these considerations do not make the acquisition of land and the erection of buildings for such purposes a municipal purpose under the law.

"Our organic law prohibits the expenditure of public money for private purpose. It does not matter whether the money is derived by ad valorem taxes, by gifts or otherwise. It is public money and under our law public money cannot be appropriated for a private purpose or used for the purpose of acquiring property for the benefit of a private concern. It does not matter what such undertakings may be called or how worthwhile they may appear at the passing moment. The financing of private enterprise by means of public funds is entirely foreign to a proper concept of our constitutional system . . .", the court concluded.

North Miami had proposed to provide plants for industrial corporations left "homeless" by the reactivation of a nearby naval air base. The first agreement called for North Miami to float a $350,000 revenue bond issue to construct a building in return for a 20-year lease to be given by the concern using the building.

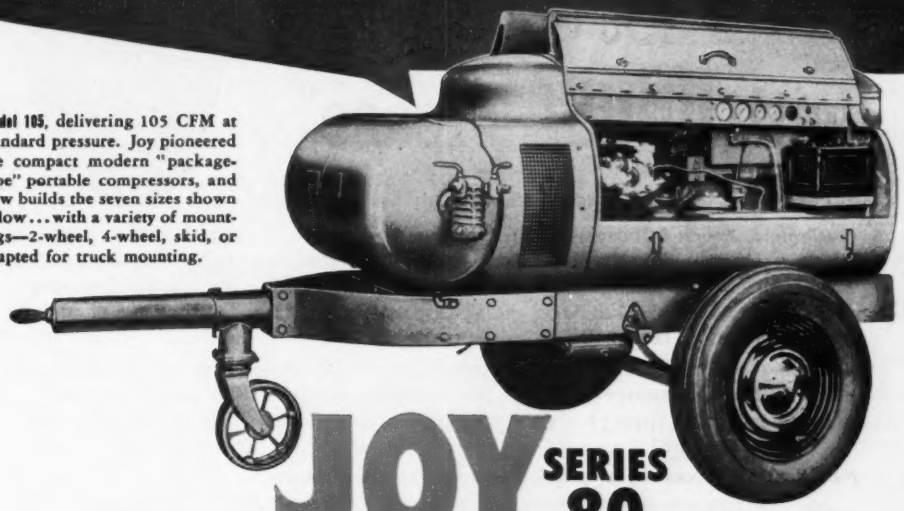
Revenue bond financing to build plant with which to attract industry has been used with increasing frequency. Currently, Alabama, Tennessee, Kentucky and Illinois allow their cities to sell revenue bonds for this purpose. These bonds are backed by the earning power of the companies occupying the plants under lease from the municipality.

Mississippi, which initiated the scheme of cities financing industrial buildings, permits its municipalities to back their bonds with general obligation revenue.

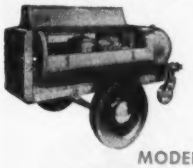
(*Municipal continued on page 55*)

Portable

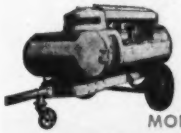
Model 105, delivering 105 CFM at standard pressure. Joy pioneered the compact modern "package-type" portable compressors, and now builds the seven sizes shown below... with a variety of mountings—2-wheel, 4-wheel, skid, or adapted for truck mounting.



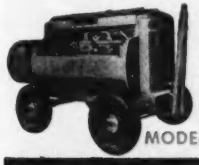
JOY SERIES 80 PORTABLE COMPRESSORS



MODEL 60



MODEL 160



MODEL 210

Compare these Features!

- ★ 2 STAGE COMPRESSION
- ★ AUTOMATIC "ECONO-MISER" LOAD CONTROL
- ★ SEVEN SIZES—60 TO 630 CFM
- ★ NOTHING TO MATCH THEM FOR MODERN, COMPACT DESIGN—PORTABILITY—RELIABLE AND EFFICIENT OPERATION

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MODEL 315

MODEL 500

MODEL 630

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"Bearing failures have not occurred with **UNOBA** grease,"

says California construction superintendent

MacDonald, Young & Nelson, Inc., in San Francisco, uses multi-purpose UNOBA grease in all of its trucks and heavy equipment. E. L. King, superintendent of equipment, writes: "Due to UNOBA's high lubricating ability, bearing failures have not occurred, nor has the replacement of parts been necessary. Also, the all-purpose quality of UNOBA grease has eliminated the necessity of our keeping 4 or 5 containers of greases."

UNOBA—the industry's original multi-purpose *barium*-base grease—stays put in service and resists oxidation in storage... protects bearing metals against foreign matter... maintains its consistency under varying loads and working conditions... withstands high temperatures and extreme moisture.

***Prove* UNOBA'S versatility for yourself with these two simple tests:**

1. Place any amount of UNOBA on a plate heated to 300° F. You will quickly see that UNOBA continues to maintain its body or structure, while most conventional greases disintegrate or deteriorate rapidly.
2. Pack UNOBA in an anti-friction bearing on your earth-moving or road-building machinery. Subject the bearing to a continuous stream of water for one hour while the bearing rotates at 600 r.p.m. UNOBA can withstand punishment of this sort—*and more*—without disintegrating or washing away.

Developed by the manufacturers of TSX—the amazing purple heavy-duty motor oil.

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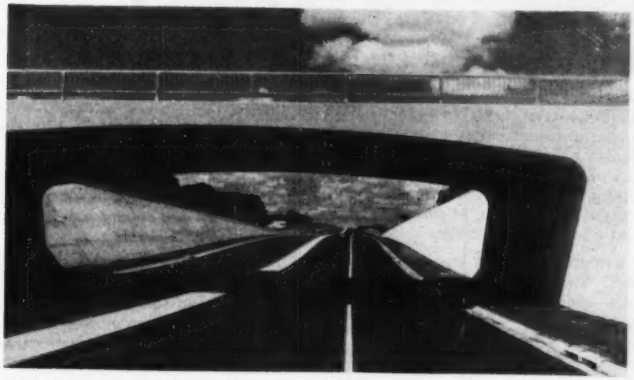
UNION OIL COMPANY

OF CALIFORNIA

Eventually the Austin Expressway will look like this . . .



But the opened section is a mile and a half like this . . .

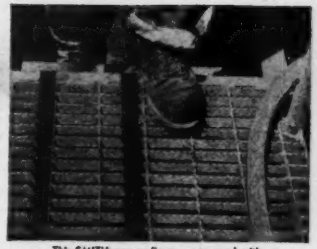
Part of Austin Expressway opened

Last month a portion of the Austin Expressway in Austin, Tex., was opened to traffic. The portion opened was a mile and a half long.

When completed, the expressway will branch off the Dallas highway several miles north of Austin, swing to the newly opened East Avenue-Cameron Road portion, go across an overpass over Airport Blvd., then east to a new expressway bridge across the Colorado, around the east side of Travis Heights, and back into the San Antonio highway several miles south of Austin.

The Colorado River crossing will add another needed bridge to the city's system. The bridge will be a six-lane span several blocks east of

(*Continued on page 58*)



This SMITHway walkway—covered with slippery drilling mud—is safe to walk on.

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Here's the time-proved torque converter for heavy service

—a compact, efficient torque converter and fluid coupling available for heavy-duty engine and equipment manufacturers

ALLISON—builder of more than 10,000 Torqmatic Transmissions for military vehicles—offers American industry this proved torque converter. It enables heavy-duty equipment to get more work done faster—with less wear and tear on equipment and less operator fatigue.

A combination torque converter and fluid coupling, the new Allison TORQMATIC CONVERTER gives heavy off-highway trucks and other power machinery the smoothness and operating ease you enjoy with a hydraulic transmission in your car. It makes practical multiple engine installations in heavy vehicles.

The TORQMATIC CONVERTER multiplies torque automatically, providing an efficient balance between engine power and changing load demands. This eliminates engine lugging and stalling — permits the engine to operate in its most effective speed range.

It also prevents shock-loading of drivelines, cables, shafts, chains, gears and axles—reduces maintenance—lengthens equipment life.

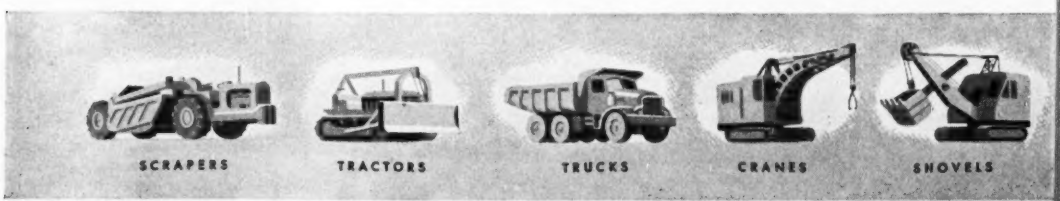
Wide Flexibility

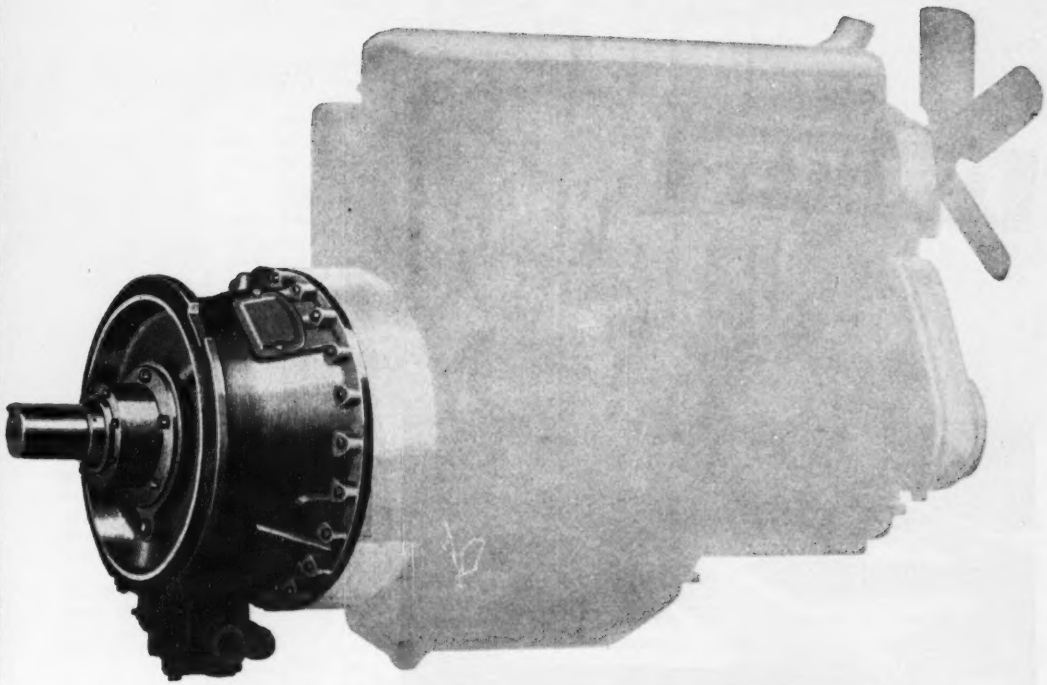
Allison TORQMATIC CONVERTERS have been applied successfully with many engines in a variety of heavy-duty equipment — trucks, tractors, earth movers, industrial locomotives, rail cars, hoisting machinery, logging equipment, drilling rigs and pumps.

In each of these applications, the TORQMATIC CONVERTER has proved its ability to get the most work done in the shortest possible time.

Allison TORQMATIC CONVERTERS furnish ideal drives for heavy-duty engines delivering 75 to 350 horsepower. These compact units take no more space than a conventional, clutch-type, power take-off. For further information write to:

ALLISON DIVISION of GENERAL MOTORS
Box 894E, Indianapolis 6, Indiana





Here's how Allison Torqmatic Drive pays off:

More work output—eliminates "gearshift guess," multiplies torque hydraulically. Automatically balances engine power with changes in load demand.

Handles heavy loads – with shock-free, pinpoint control.

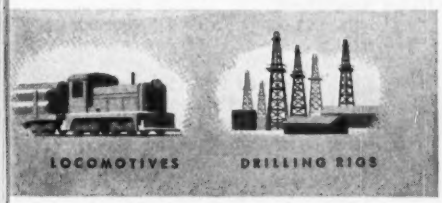
Longer equipment life—increases life of drivelines, axles, chains, sprockets and gears. Reduced wear and tear on equipment means higher availability.

Longer engine life – no engine lugging or stalling—reduces shock-loading on engine and components.

Few moving parts—simplified design with one-piece cast converter elements—easy to maintain.

Compact design—simplifies installation.

- Designed for power application from 75 to 350 h.p.
- Wide variety of models including industrial shafts, automotive type flanges, dis-connect clutches, lock-up clutches, output shaft governor drive.



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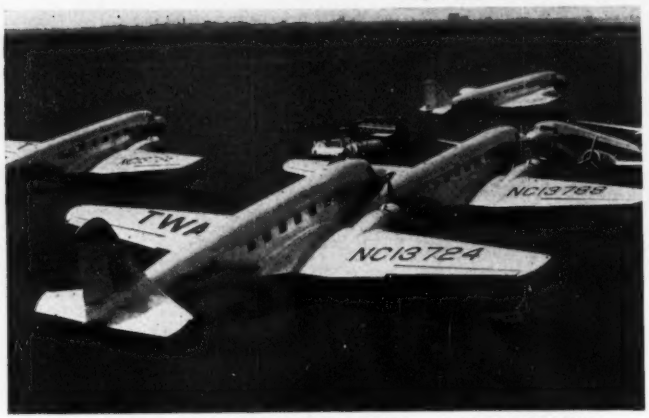
Surface Seal



AIR FIELD ASPHALT PAVEMENTS — LAST LONGER WHEN SEALED WITH J-16 BECAUSE:

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Protective maintenance pays profits

For complete details on Jennite J-16—Write for Specifications and these two brochures.

MAINTENANCE INC.
WOOSTER·OHIO
CABLE ADDRESS "MINCO"

Congress Avenue. Construction is now in progress from a point just north of Airport Blvd. to the north city limits.

Bids were taken last month by the Texas Highway Commission for starting two more sections covering construction of "frontage" streets along East Avenue from 17th to East 12th, and initial construction of the north leg which will run from the north city limits 7½ mi to a junction with the Dallas highway.

The East First Street to South Austin link is expected to be under construction early in 1953.

• **Long planning**—The opening of the expressway is the culmination of long-range planning started when the city was laid out.

West and East Avenues were set as boundaries. West Avenue was laid out as a 60 ft street, but East Avenue was laid out as a 200 ft street, which provided the minimum right-of-way for the inter-regional highway.

• In 1927, the city council officially adopted the Koch and Fowler report for a future city plan calling for a major highway on, or in the vicinity of, East Avenue.

• In 1943, the highway department's master plan for Travis County was approved after three years of study by city, county, and Chamber of Commerce Traffic Committees. (The East Side Highway was included in this plan.)

• In 1946, highway committees for Travis County and its territory called for action on the bond issue for purchase of right of way for the expressway.

• In 1947, the City Council voted to go ahead with the expressway program.

Changes in works program opposed by city council

The Seattle City Council in two unanimous actions, has served notice upon Mayor Allan Pomeroy, who took office June 1, that he may expect lots of opposition on his proposed changes to the city's public works program.

In the first action, the council repassed, over the mayor's veto, an ordinance appropriating $125,000 for paving underneath the new Alaskan Way viaduct.

In the second action, the council directed the Board of Public Works to call bids for the $650,000 Alki Point sewage treatment plant and Admiral Way interceptor sewer—both strongly opposed by the mayor.

A section of the drafting room . . . International Business Machines Corporation, Endicott, New York

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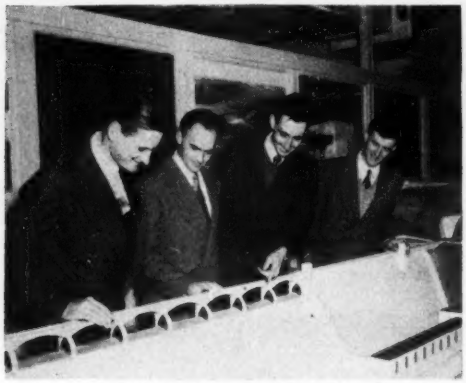
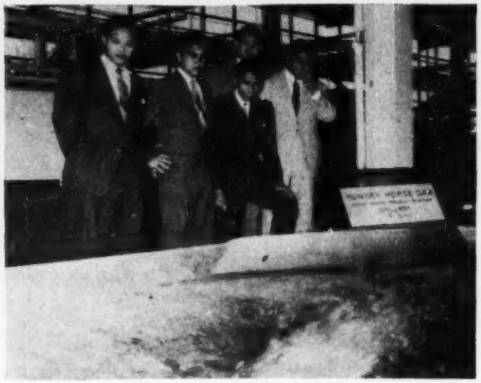


GRAND CANYON MODEL—Australian civil engineer trainees inspect Grand Coulee Dam architectural model at Denver. They are, left to right, Aubrey D. Hasking, Lance A. Endersbee, Darcy T. Walsh and Richard L. Sanders. This model is of special interest to them because of several large dams being built in Australia.



"GLORY HOLE" SPILLWAY—Five Thailand engineers observe tests with a model of the Hungry Horse Dam spillway in the hydraulic laboratory of the Bureau of Reclamation at Denver. Left to right, are C. Bhumisawasdi, P. Malakul, U. Panyaphol, A. Indrathongmorn and S. Bhadrasiri.

Interchange of engineering talent works for the good of the free world

The Bureau of Reclamation's Denver offices and laboratories are continuing to grow in importance as a center for exchange of engineering talent among the nations of the free world.

Fifty engineers from eleven countries are now in the United States participating in programs under direction of the Bureau's Foreign Activities Section. In addition, there is a continual stream of U.S. engineers leaving Denver for specialized assignments at foreign points.

Money for the Bureau's foreign activities is obtained from three main sources: 1. The Technical Cooperation Administration of the State Department under the "Point Four" program; 2. The Mutual Security Agency; and 3. Contracts with the nations concerned.

• **Australia well represented**—Now in the U.S. working through the Denver headquarters are 14 engineers from Australia, 13 from Thailand, 6 from India, 5 from Turkey, 2 each from Burma, Pakistan, Venezuela, Brazil and Nepal, and 1 each from Iraq and Iran. These trainees, all of whom can speak English, work closely with Reclamation Bureau engineers in a "learning by doing" program.

They are given specific jobs under the same general requirements as their U.S. associates. Trainees have recently been assigned to the Canyon Ferry and Hungry Horse dams in Montana, the Columbia Basin project in Washington, Central Valley project in California, Yuma and Gila projects in Arizona, Rio Grande project in New Mexico and Texas, Colorado-Big Thompson project in Colorado, and the Missouri River Basin project in Colorado, Kansas, Nebraska, Wyoming, Montana, North and South Dakota.

Bureau of Reclamation provides technical services, laboratory and analytical studies for projects in the trainees' homelands.

(*International continued on page 64*)

GREEKS STUDY OUR METHODS—Studying American methods of power plant construction at Pacific Power & Light Co.'s Yale hydroelectric project in southwestern Washington are two engineers from the Greek national power grid. Inspecting the giant spillway of the $28-million, 108,000 kw project are, from left, J. B. McKamey, project engineer, George Kalkanis, John Moraitis, and George Henderson, resident engineer.

Week of September 7-13

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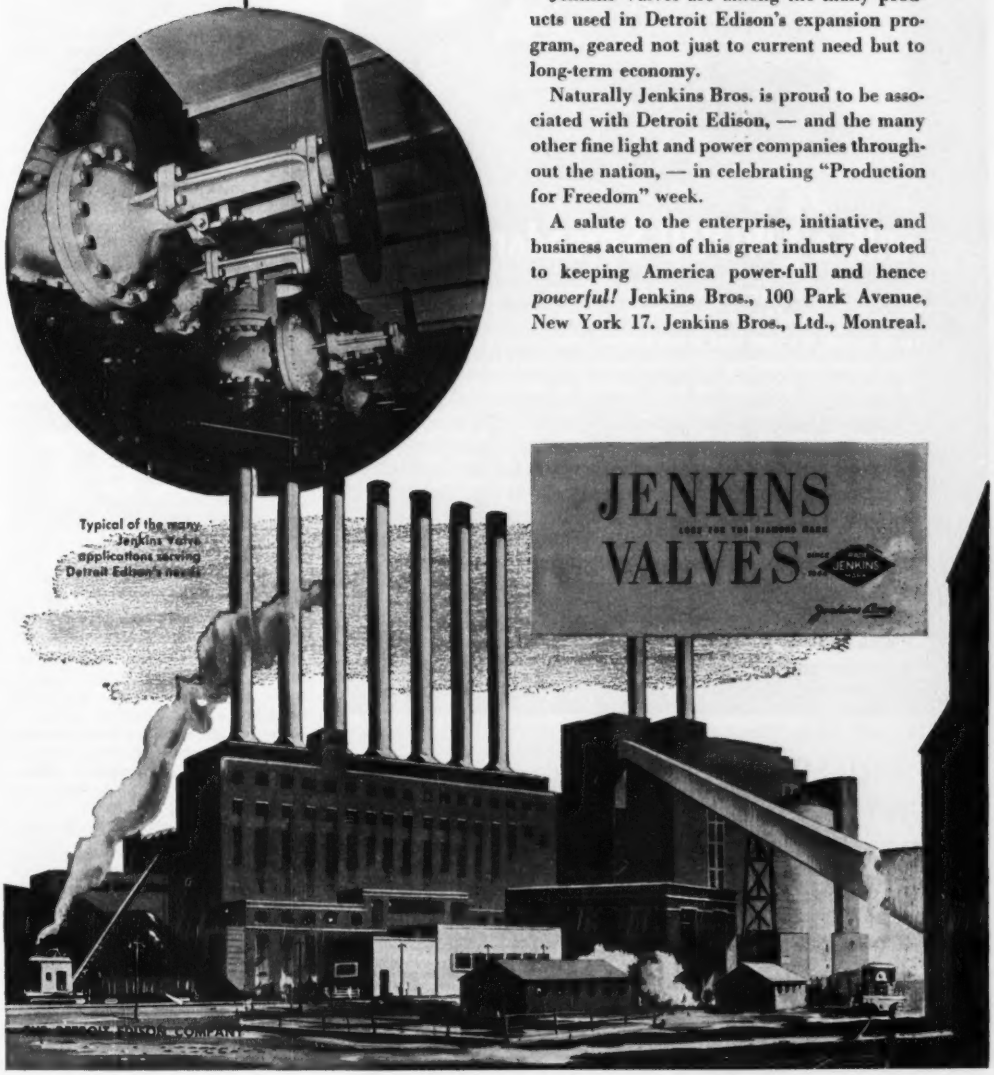

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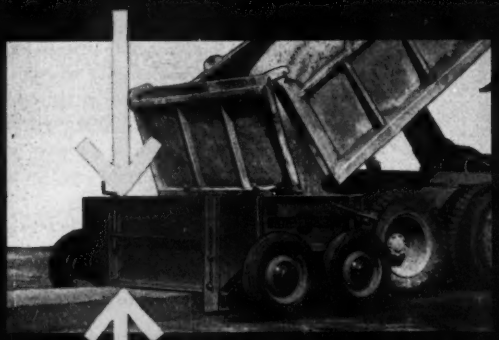

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INTERNATIONAL

The 14 engineers from Australia who will work on the huge Snowy Mountains hydro-electric and irrigation project in New South Wales and Victoria —are studying methods and practices at Denver. This training program is slated to continue for a number of years, with about 12 Australian engineers coming to the U.S. annually.

To assist further in the Snowy Mountains project, the Denver Bureau of Reclamation office sent a group of four engineers to Australia earlier this year. At the same time, a fifth U.S. engineer went to Melbourne to advise the city's water department on problems in connection with earth dams for the municipal water supply.

• **Large group from Thailand**—Another large foreign group—the 13 engineers from Thailand—is receiving training to be used in the projected Chao Phya Dam, which will provide hydroelectric power, extend river navigation, and irrigate a 3,300,000-acre area. As now planned, the 780-ft-long Chao Phya Dam will be the largest in Thailand. Earth, rock and concrete samples have been brought from Thailand to Denver for testing.

Biggest U.S. mission now out of the country consists of 21 engineers in Lebanon, including nine from the Denver headquarters. They are working on Litani River power and irrigation development.

Other groups and individual engineers have been sent thus far this year to Pakistan (in connection with land drainage problems); Chile (to advise on the development of ground water for irrigation in the El Qui Valley; Iran (to advise on administration of construction); Libya (to advise on water development); India (to advise the Central Water and Power Commission); Thailand (on assignment to the Royal Irrigation Department); and Nicaragua (to study the possibility of hydro-electric work.

The foreign activities work is under the direction of S. H. Poe, head of the Technical Information Office. R. A. Nelson is head of the Training and Visitors' section.

Subject to availability of funds, Denver Bureau of Reclamation officials expect the number of foreign trainees in the U.S. to continue the steady growth which has marked the program since its inception in 1946. Foreign requests for U.S. engineers have also mounted and far surpass the available supply of Bureau of Reclamation personnel. Domestic work, it is emphasized, must continue to take precedence over foreign assignments.

(*Continued on page 64*)

MIDLAND, MICHIGAN PROJECT

Site-Cast 10' CONCRETE PIPE

saves 1/3 on storm sewer outlet

Universal equipment, set up at the construction site in this Midland, Michigan project, eliminated shipping time and costs. Pipe was lifted from "plant" to ditch. Local labor and materials were used. The result: a third less in cost than monolithic construction.

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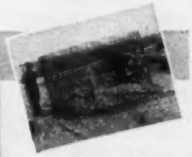

This heavy, reinforced wire cage goes into site-cast forms before concrete is poured.

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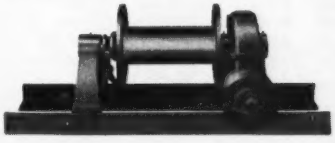

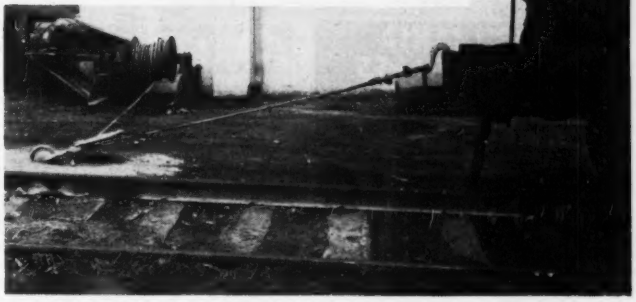

This Model 10 Tulsa Winch is used by a commercial chemical fertilizer manufacturer to spot freight cars for loading and unloading. It is powered by an electric motor and does not use lever controls.

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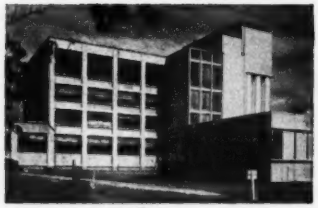

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GOING DOWN—Three barges are lowered 86 ft in France's new lock at Bollene on the Donzere-Mondragon canal that bypasses rapids in the Rhone River.

France's high-lift lock begins service on Rhone

On July 3 another milestone was reached on France's great Donzere-Mondragon power and navigation project when three self-propelled barges of merchandise passed through the lock at the Bollene power plant. With a lift of 86 ft it ranks among the locks of the world, second only to the 92 ft lift at McNary Dam on the Columbia River.

A few weeks prior to the lock inauguration, the first of the generators in the power plant was also put in service.

The Bollene lock is 39.5 ft wide and 640 ft long (140 ft more than McNary), and such large dimensions made rapid filling and emptying a major requirement. The special system of conduits and valves that was installed (ENR Nov. 22, 1952, p. 30) has proved to be as efficient as the model studies indicated that it would be. According to Marc Henry, chief design engineer of Compagnie Nationale du Rhone, the French government agency in charge of the project, raising and lowering of the water surface can be accomplished at a rate of 16 ft per min, with all of the valves open, which was what was predicted from the model studies.

One of the first passages through the lock was that of a large dredge which will be used to deepen and maintain the entrance to the canal from the Rhone some 10 miles upstream. In the meantime, however, the canal is in service and barge traffic between Marseilles and Lyon is expected to increase steadily now that this new facility permits bypassing one of the bad sections of rapids in the river.

Concrete shell roofs

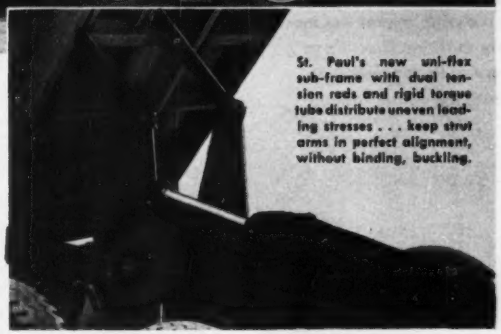
Methods of designing and building long-span thin-shell concrete roofs were analyzed and compared in a symposium held July 2 to 4 in London.

Topics ranged from the history of the development of this type of construction through the accuracy of various design theories to methods of forming the shells. Many of the structures referred to in the papers are spectacular by American standards—like the bus garage at Wythenshawe, Manchester, with a 2¾-in. shell spanning 42 ft between 168-ft arches; the Fronton Recoletos hall in Madrid, with two 3⅛-in. shells covering a 180x106-ft area and intersecting over it without a stiffening beam at the intersection; and the 248-ft dia Leipzig Market Hall domes, each with a shell 3½ in. thick.

The meeting was sponsored by the Cement and Concrete Association, 52 Grosvenor Gardens, London, S.W.1.

(*International continued on page 67*)

New heavy-duty St. Paul dump body teams with 31-ton capacity St. Paul hoist to deliver bonus payloads for Grasse Construction Co., Beacon Falls, Conn.



St. Paul's new uni-flex sub-frame with dual tension rods and rigid torque tube distribute uneven loading stresses . . . keep strut arms in perfect alignment, without binding, buckling.

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You don't have to worry about "lifting arm troubles" with St. Paul's new bonus capacity hoists because *each arm automatically takes half the load, regardless of loading conditions.* This exclusive feature—proved by strain gauge tests on over 24,000 dumps (equal to 12 years of service) — means St. Paul can save you hundreds of dollars annually in hoist maintenance alone.

But that's not all. St. Paul also gives you *up to 22% more payload capacity per dollar* because of better lifting leverages, combined with reduced deadweight and greatly improved hydraulic efficiency. See for yourself how these great new St. Paul hoists and dump bodies work. Drop in on your St. Paul Distributor, or *mail coupon for free literature.*

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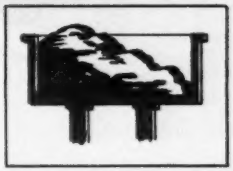

New St. Paul hoists not only equalize uneven loads on strut arms, but also provide replaceable bushings at critical load points to simplify field repair when normal wear finally does occur.

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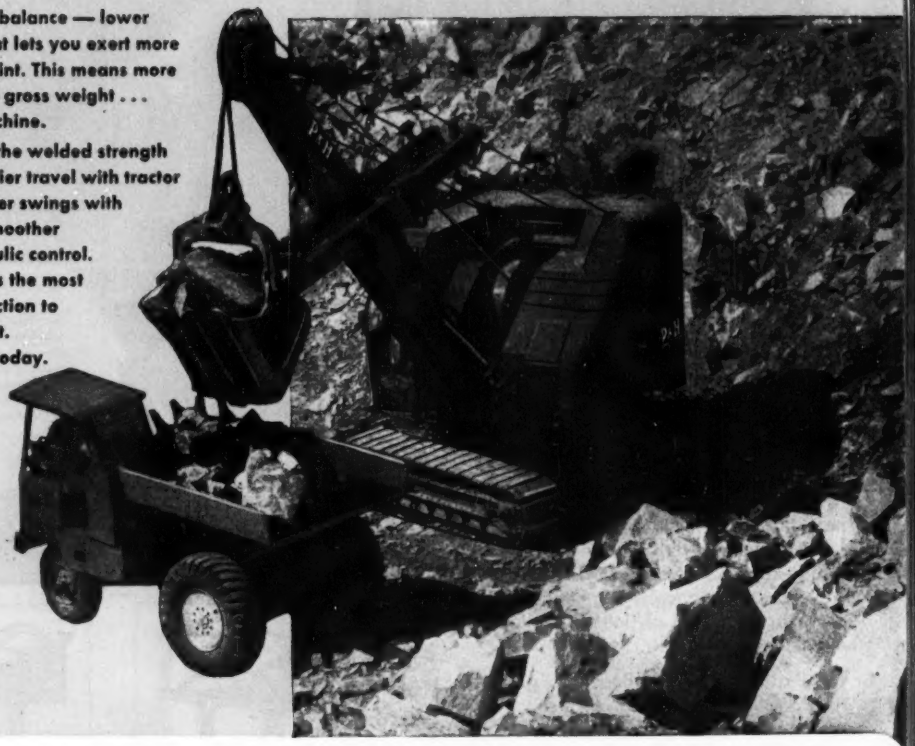

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Extensive port work planned for San Juan

A project to provide modern deep water berth facilities at San Juan, Puerto Rico, is being considered. The object would be to permit the economical handling of the rapidly growing water-borne commerce of that port, and especially to bring about the establishment of an efficient assembly and distribution center for food and related products.

The announcement was made by Salvador V. Caro, general manager of the Puerto Rico Transportation Authority, who said that arrangements had been concluded with James C. Buckley, Inc., terminal and transportation consultants of New York, for the preparation of a master plan for the first stage of the development in the Martin Pina-Puerto Nuevo area of San Juan harbor.

This first stage of the work will include at least two deep water berths for handling general cargo; the related transit and storage facilities; centers for assembly and distribution at wholesale and retail of water-borne foods and related products, including locally grown fruits and vegetables; a grain elevator; and a slaughtering and meat-processing plant with deep water access.

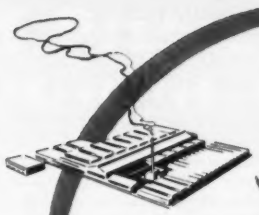
The initial objective of the master planning studies will be to determine the section of the area best suited for construction so that bulkheading, filling, and dredging may proceed at once.

This work will be carried out under a first appropriation of $4,500,000 made by the Insular legislature in the current year.

International briefs . . .

• **Pollution control board**—It has been decided to establish a pollution control board for Ontario, Canada. It will be made up of members of six provincial departmental staffs and will advise the administration on all pollution problems and coordinate all pollution control. In 1950 sewerage projects valued at almost $31 million were approved as compared with an expenditure of only $2,800,000 for that purpose in 1939.

• **Nigerian suspension bridge**—For the government of Nigeria, Africa, the Crown agents for the British Colonies have made a contract with Dorman Long & Co. for an $882,000 suspension bridge over the Cross River. Requiring 500 tons of steel, the bridge



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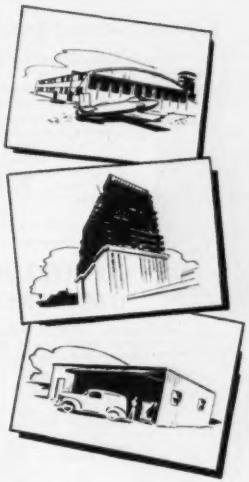

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will be 590 ft long, the main span being 350 ft. Location is about 120 miles inland from the West African coast. The bridge will carry the only road joining the eastern provinces of Nigeria with the British Cameroons. Consulting engineers are Coode and Partners of London.

• **TCA program planning**—Omar B. Pancoast, Jr., has been appointed director of program planning for the Technical Cooperation Administration, and also will serve as vice-chairman of the Program Review Board, responsible for the evaluation of results of the Point 4 program. He has been chairman of geography and international resources studies for the Economics Department of the College of the City of New York.

• **Civic improvements planned**—A proposal is to be presented to the Board of Control of Hamilton, Ont., for the improvement of 108 acres of the West End dump area of that city. New construction would include an arena-auditorium, city hall, court house, farmers' cooperative, supermarket, and provisions for underground parking.

• **Dredge for Indonesia**—A very large hydraulic pipeline dredge has been made and delivered to the Republic of Indonesia by the Ellicott Machine Corp. of Baltimore, Md. It has a rated output of 650 cu yd of solid material per hour at a maximum dredging depth of 39.4 ft. below water. It is the largest of nine dredges built by Ellicott for Indonesia. They are being used in harbor improvement work for better handling of strategic raw materials to be exported to the U. S.

• **Large loan for Turkey**—The International Bank for Reconstruction and Development has made a loan of $25,200,000 to the Republic of Turkey to assist in the development of the Adana Plain in the south-central part of the country—to be used for flood control, irrigation and hydro-electric power. Works to be financed include construction of an earth dam, a power station, and transmission lines to the industrial centers of Adana, Marsin and Tarsus. These installations form the key part of the project for the full control and utilization of the waters of the Seyhan River. It is estimated that by 1965 the annual consumption of energy will reach 164 million kwh.

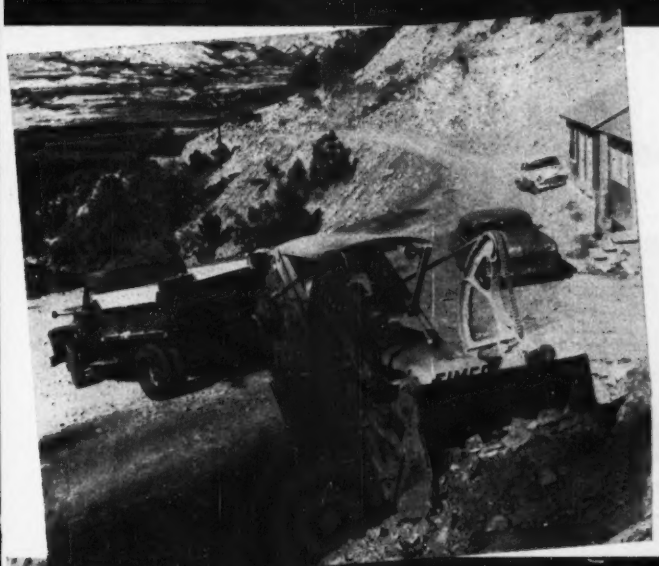
• **East Pakistan roads**—TCA has agreed to provide technical assistance for the development of roads in East Pakistan. A U.S. survey crew will study road building problems in delta and marsh areas, including specifications for road building equipment needed. Pakistan specialists will come here to observe road building methods in areas of climate and geographical characteristics similar to those of their own country. And there will be comprehensive training of road building crews in actual construction and in the care and maintenance of equipment.

• **Dominican stadium**—A stadium to accommodate 25,850 spectators will be built at Ciudad Trujillo, Dominican Republic, by W. F. Holman and J. W. Holman, American engineers, and President Trujillo. The field will be tile-drained and completely equipped for all sports. The contract calls for expenditure of $2,500,000.

FARM EQUIPMENT AND MISSIONARIES—The Le Tourneau Ark, a converted landing craft, which will carry farm equipment and missionaries to Africa, arrives in New Orleans after a cruise down the Mississippi River. Backed by R. G. Le Tourneau, the well known manufacturer of earth-moving equipment, the expedition is about to sail for Liberia to clear jungles and teach the natives to farm in the modern way.—Wide World photo.

STOCK PILE LOADING

LOAD MORE, FASTER, AT LESS COST



Loading from stockpiles is most economical when you use an Eimco 104 Loader.

Sustained loading rates as high as 300 tons per hour average are common, with this machine.

Heavy-duty construction assures dependability . . . easy handling makes them the favorite of loader operators.

Write for complete information on Eimco 104 Loaders.

EIMCO A389

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The World's Largest Manufacturers of Underground Rock Loading Machines

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AGENTS IN ALL PRINCIPAL CITIES THROUGHOUT THE WORLD

"John, this building of mine holds a cost-cutting *Tip-Off* from ONE BUSINESSMAN TO ANOTHER"

"What is it?" asked John, a prominent appliance manufacturer.

The contractor answered, *"Simply this: don't take your fasteners for granted!*

"An RB&W man showed me how a switch in fasteners could help me make field connections much more economically.

"He suggested switching from rivets to high strength bolts. They cost more than rivets initially, but the assembled cost is much lower. My men work faster than with rivets. The building goes up faster."

You, too, can find a cost-cutting lesson from this story, whether you're in construction* or any other industry.

MORAL: Look to your fasteners for an often overlooked opportunity to reduce costs, and strengthen your competitive position. New inventions, like RB&W's SPIN-LOCK Screw, may prove more efficient than the fasteners you're now using. Or you may save by the stepped-up production you get from using the finest fasteners . . . RB&W bolts, screws, nuts and rivets of uniform accuracy, dependability and physical properties.

Let RB&W help you make the most efficient use of fasteners on your assembly line. Address RB&W at Port Chester.

RB&W—The Complete Quality line. Plants: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices: Philadelphia, Pittsburgh, Detroit, Chicago, Dallas, Oakland. Sales agents: Portland, Seattle. Distributors from coast to coast.

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

*If you're interested in construction, write RB&W at Port Chester for a free reprint of the recent article, "No More Riveting."

RB&W 107 YEARS MAKING STRONG THE THINGS THAT MAKE AMERICA STRONG

DPA spurs post-attack plans

WILLIAM J. HOFF, head of post-attack production staff formed by DPA.

The Defense Production Administration is launching a new effort in the direction of post-attack planning.

A newly formed post-attack production staff, is being headed by William Jay Hoff. Its mission is to coordinate all DPA activities that deal with industrial dispersion and rebuilding industry after an attack.

Hoff is given responsibility for the post-attack program. He is authorized to serve as chairman of any committee which may be established by the administrator on post-attack industrial rehabilitation, and to form task forces to carry out staff functions.

The staff will represent the DPA in its relations with the National Security Resources Board, the Industry Evaluation Board and the Facilities Protection Board of the Department of Commerce, and other organizations concerned with post-attack planning.

• **A man-sized job**—If Hoff and his staff are to perform the functions set out for them, then they have a man-sized job ahead. Hoff's first concern will be to coordinate his agency with the staffs and plans of all the other committees, boards, and departments working on disaster planning. If he can get agreement on who does what, on what authority and with what funds, he will have made a material contribution towards winning the next peace.

Hoff brings to his new job a long and valuable experience of the law, and of public service at the city, state, and federal levels, and probably knows as well as anyone how things happen at Washington. His experience at the capital includes periods of service in the National Recovery Administration, the War Production Board, the Economic Cooperation Commission, and the State Department. He has served as a special assistant to the DPA administrator since August 1951.

• **The preparedness picture**—The general picture of our preparedness for civil action in case of enemy air attack is not encouraging, except to a potential attacker.

The Federal Civil Defense Administrations, concerned mainly with action to be taken at the actual point of attack, is meeting with only moderate success in its organization and training of volunteers.

The National Security Resources Board, the Mobilization Planning Body reporting directly to the President, has restricted its studies so far to the electrical utilities and transportation industries. Its first recommendations are not yet published.

The host of other government agencies charged with keeping the nation's pulse beating, have been unable to do more than list the various components of the blood-stream—water supply, emergency housing, inter-communication and the like—for which they expect to be held responsible.

The one agency to produce something definite so far is the FCDA, with its pamphlet on "engineering services" (produced after consultation with Associated General Contractors), showing what construction companies and contractors might be called on to do during and immediately after an attack.

(This pamphlet, a guide to state and local civil defense organizations in planning and establishing engineering services essential to the revival of the community after an attack, is obtainable from the Director of Documents, Washington 25, for fifteen cents.)

• **Up to Congress**—The plain fact is that the problem of post-attack action has heretofore been nobody's clear responsibility, and funds have not been available even for planning an organization to tackle the problem.

The decision to hold present action

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Only durable Sisalkraft Blankets insure lowest possible curing costs—and best curing results.

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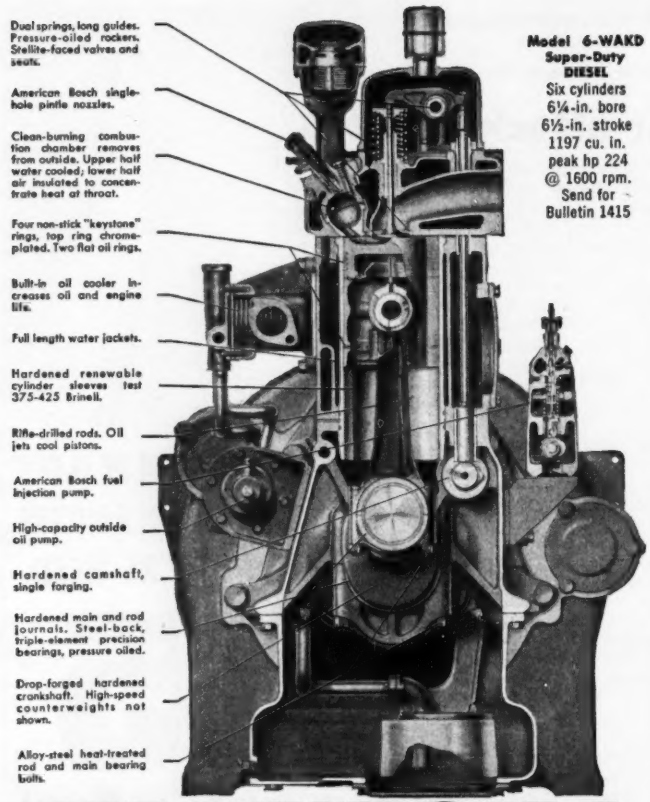
Dual springs, long guides. Pressure-oiled rockers. Stellite-faced valves and seats.
American Bosch single-hole pintle nozzles.
Clean-burning combustion chamber removes from outside. Upper half water cooled; lower half air insulated to concentrate heat at throat.
Four non-stick "keystone" rings, top ring chrome-plated. Two flat oil rings.
Built-in oil cooler increases oil and engine life.
Full length water jackets.
Hardened renewable cylinder sleeves test 375-425 Brinell.
Rifle-drilled rods. Oil jets cool pistons.
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High-capacity outside oil pump.
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Hardened main and rod journals. Steel-back, triple-element precision bearings, pressure oiled.
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Alloy-steel heat-treated rod and main bearing bolts.
Model 6-WAKD Super-Duty DIESEL
Six cylinders
6¼-in. bore
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1197 cu. in.
peak hp 224
@ 1600 rpm.
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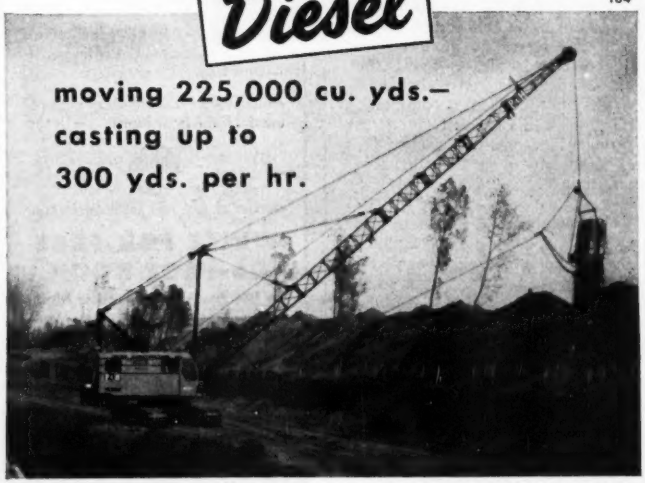


WAUKESHA MOTOR COMPANY, WAUKESHA, WIS., NEW YORK, TULSA, LOS ANGELES

to the unrealistic drawing of organization charts has been made, wisely or unwisely, by Congress in its appropriations. The effect of Congress' attitude on the FCDA's activities, for example, is shown in the following comparison of funds asked for and funds granted over the last three years (millions of dollars):

1951..asked for—403; granted—33.5
1952..asked for—535; granted—74.9
1953..asked for—600; granted—43.0

Unless the threat of air attack becomes more imminent and apparent, our provision for post-attack action can apparently consist only of intelligent planning and paper organization. To make these plans effective, Hoff and his staff face a real challenge.

ASCE to honor 5 with membership

Five new honorary members—two from the United States and three from abroad—will be inducted into the American Society of Civil Engineers during the Sept. 3-13 convocation of engineers in Chicago, celebrating the Society's centennial and its position as America's oldest national organization of engineers. In keeping with the spirit of the celebration, three of the honorary members are past presidents of sister engineering societies.

The new honorary members are Ervin G. Bailey, New York; Harvey S. Mudd, Los Angeles; Andre L. J. Coyne, France; Chalmers J. Mackenzie, Canada, and Ary F. Torres, Brazil.

Bailey, vice president of the firm of Babcock & Wilcox Co., is past president of the American Society of Mechanical Engineers.

Mudd, past president of the American Institute of Mining and Metallurgical Engineers, has been engaged for many years in the development and management of important Mediterranean copper mines. With others of his family he established the Seeley W. Mudd Memorial Fund, income from which goes to projects advancing the art of mining and metallurgy.

Coyne, an A.S.C.E. member, is an internationally known designer of dams and is noted also for his achievements in the fields of port structures and of bridges. Since 1946 he has been president of the International Commission on Large Dams.

Mackenzie is president of Atomic Energy of Canada, Ltd., president of the National Research Council and

(*Men & Jobs continued on page 76*)

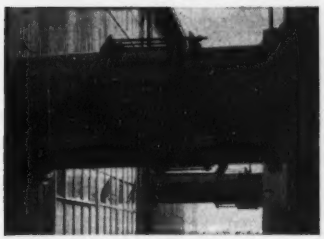
Delays don't go

on Defense construction

Vital construction today must move rapidly. Pipelines have to go in quickly—must be dependable. Dresser Couplings make your fastest, surest pipeline installation—whether it's a temporary line for construction purposes or a permanent line that must serve for years and years.

These factory-made pipe joints require only a wrench to install. Any laborer can do the job and do it right. Dressers make "flexible-tight" joints that remain tight despite vibration and expansion-contraction stresses that would open rigid or caulked lines. Suitable for gas, air, oil, gasoline, water and other lines. Mail the coupon below for information and engineering reports on recent Dresser Coupling installations.

This Dresser-Coupled line supplies gas to a Detroit steel mill . . . dramatically illustrates the rugged service expected and received with Dresser Couplings. Heavy vibration from railroad tracks on both sides and over line, is harmlessly absorbed by Dresser gaskets and the line stays permanently "flexible-tight."



Ability to withstand vibration is important here. Dresser Couplings stay tight on exhaust lines of 2400-h.p. engines at a pumping station in the southwest.

In close quarters, dependable connections are easily made with Dresser Couplings. Many engineers say they are "the only practical pipe joint" in crowded locations.

Dresser Couplings are extremely useful for temporary construction lines. Lines may be disassembled and moved with virtually 100% salvage—especially important in times of shortages.

DRESSER

"FLEXIBLE-TIGHT"

COUPLINGS

Dresser Manufacturing Division,
319 Fisher Avenue, Bradford, Pennsylvania
(One of the Dresser Industries)

GET THESE FOLDERS NOW!

Interesting engineering data on varied types of lines installed with Dresser Couplings. This is file material.

Gentlemen: Please send me your "Report of Dresser-Coupled Lines," your "Bridge River" reprint, and "Style 38" Catalog.

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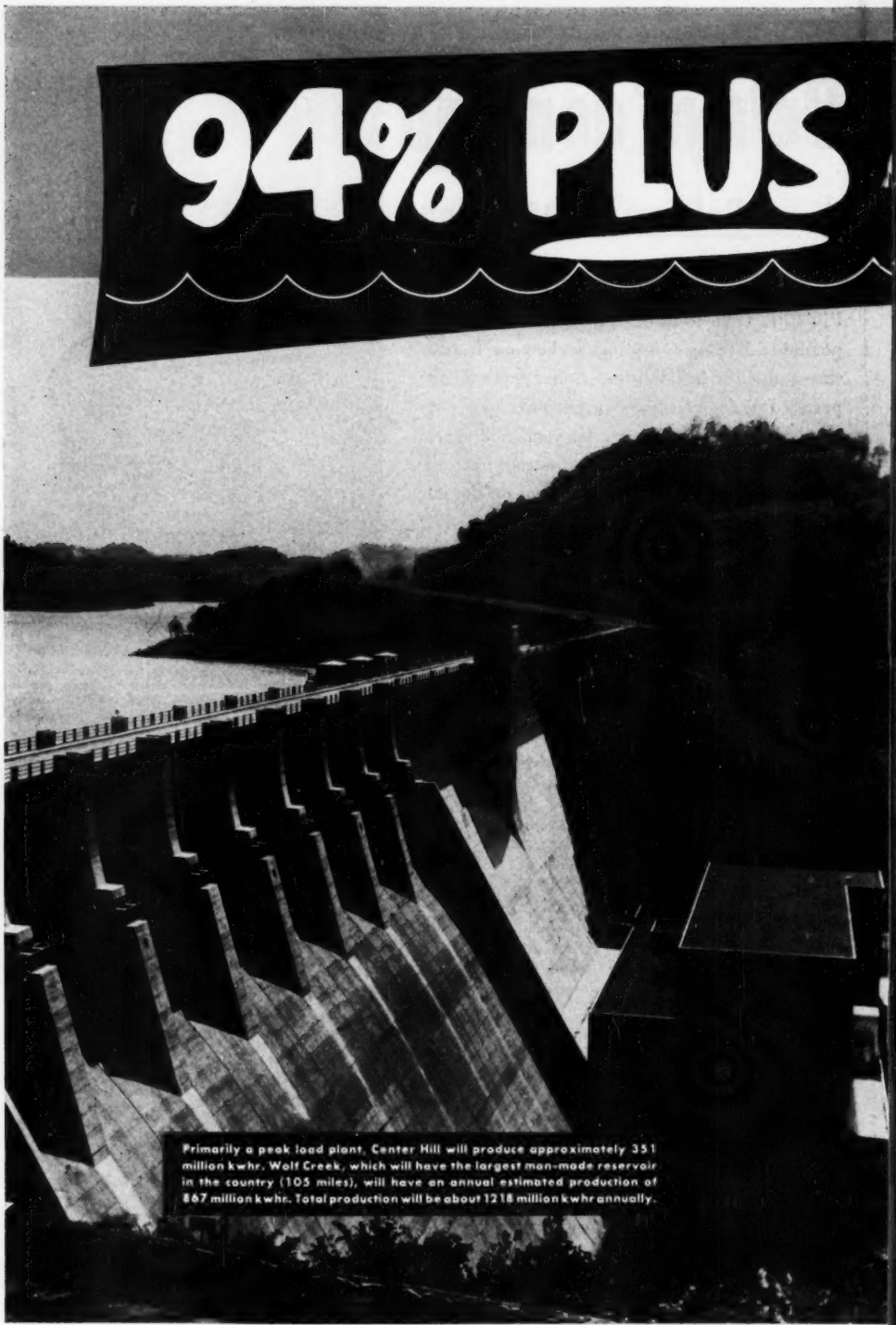


Primarily a peak load plant, Center Hill will produce approximately 351 million kwhr. Wolf Creek, which will have the largest man-made reservoir in the country (105 miles), will have an annual estimated production of 867 million kwhr. Total production will be about 1218 million kwhr annually.

EFFICIENCY

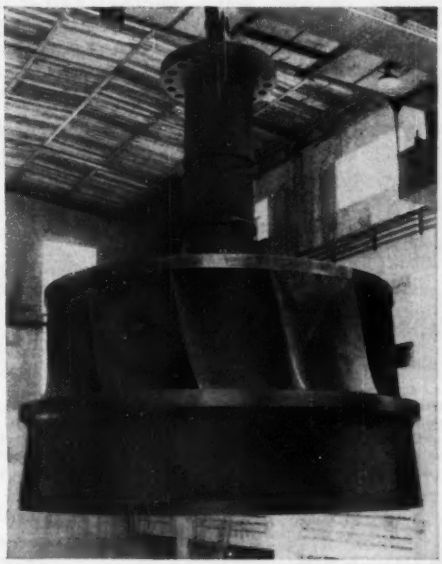
. . . for the BALDWIN turbines at Wolf Creek and Center Hill

Key units in the Corps of Engineers' plans to develop the resources of the Cumberland River Valley are Wolf Creek and Center Hill Dams. Together they will have a combined storage capacity of 8,000,000 acre-feet—generate about 1218 million kwhr each year.

To produce this power, nine Baldwin-built turbines are being installed—six at Wolf Creek and three at Center Hill. And based on early test runs, they will play an important role in making these two hydro-electric plants among the most efficient in the country.

During acceptance tests, for instance, Turbine No. 2 at Center Hill has shown a maximum attained efficiency (at normal synchronous speed and 160 foot head) of 94%+ . . . one of the best efficiencies ever obtained for Francis-type units. Since all turbines are identical, overall plant efficiencies are expected to be excellent.

Whatever your hydro-electric project, Baldwin Engineers will be glad to put their experience and resources at your service to help you get the high efficiencies you want. Experienced with all the four basic types of turbines—Impulse, Propeller, Francis and adjustable blade (Kaplan)—they can give you an unbiased opinion of the type best suited to your flow and head conditions.

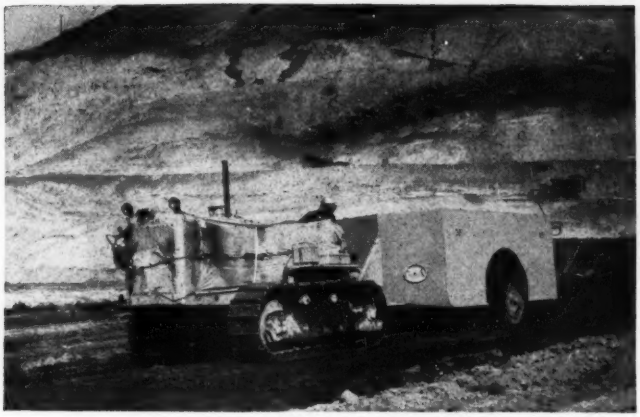


One piece 127,200 lb., 186⅞ in. runner for the Baldwin 62,500 hp vertical Francis-type turbines for Center Hill and Wolf Creek Dams.

Baldwin-Lima-Hamilton Corporation, Eddystone Division, Philadelphia 42, Pa.

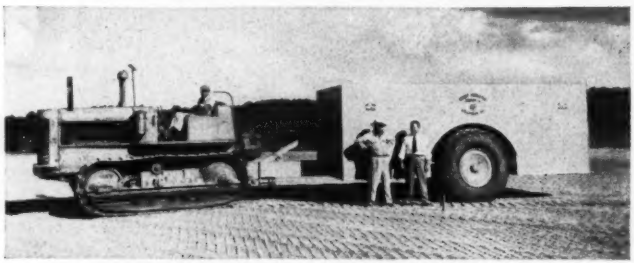
BALDWIN-LIMA-HAMILTON

Pelton Water Wheel Company, 2929 Nineteenth St., San Francisco 10, Calif.



King of the Heavyweights—the 50 ton BROS ROLL-O-PACTOR

Have you seen a giant rubber-tired Roll-O-Pactor in action? If not, you should see how its extra large wheels and tires put "super load compaction" on deep, soft lifts up to 24 inches . . . how Bros Rocking Beams keep tires squarely in contact with uneven ground, riding slopes as high as 19°. Tested over a variety of actual job conditions, the Roll-O-Pactor has been more widely approved than any other compactor! And it is solidly backed by the complete Bros service organization. 35 and 50 ton models. You can vary rolling weight to suit jobs.



The Wright Construction Company of Columbus, Georgia used a Model 450 Bros Roll-O-Pactor with 70 lb. tire pressure and 40 ton roller weight to compact a 118 lb. per cubic foot sub-grade to 98-100.2% of required density in one pass. After placement of 8 inch base material, they got 100% required density on the base and 98 to 100% as deep as 24 inches in the sub-grade in *three passes.*

WRITE FOR NEW CATALOG

Get your free copy of this big new catalog filled with results of soil tests, equipment comparisons and actual job histories. No construction man who is concerned with compaction should be without it! Write for your copy today.

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World's Largest Manufacturers of Pneumatic-Tired Rollers

director of industrial research and development in the National Department of Reconstruction. He has been dean of engineering in the University of Saskatchewan and is a past president of the Engineering Institute of Canada.

Ary F. Torres, an authority on cement and other construction materials, is Brazilian Ambassador to the United States Point 4 Program and president of the National Economic Development Bank of Brazil.

Pre-fab structure company appoints chief engineer

John H. Porteus has been appointed chief engineer of the Luria Engineering Company, according to an announcement last week by Edwin H. Webster, general manager.

Porteus, who was until recently assistant chief design engineer in the machinery division of the Dravo Corporation in Pittsburgh, will make his headquarters at Luria's steel fabricating plant in Bethlehem, Pa. Prior to his last connection he was for 14 years with Jackson & Moreland, consulting engineers of Boston, as assistant head of the structural division and as principal engineer.

Born in England, he came to America in 1927. He graduated from Worcester Polytechnic Institute in 1932 with a B.S. in civil engineering.

He is a member of the American Society of Civil Engineers, American Concrete Institute, Engineers Society of Western Pennsylvania.

Oil company ups Popkin to planning coordinator

Charles B. Popkin, Denver, Col., has been promoted to coordinator of construction, design and layout for Continental Oil Company's marketing department.

Popkin's duties will include coordinating the planning of construction and design of Conoco service stations, bulk plants and other marketing properties.

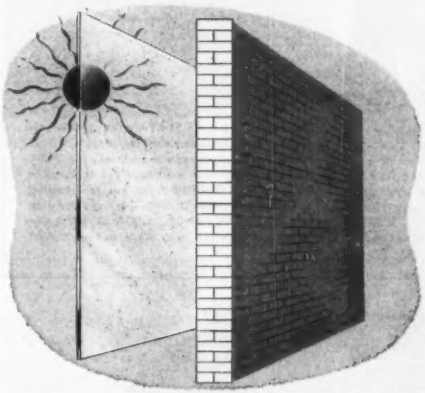
Popkin graduated from Oklahoma A. & M. College, Stillwater, Okla., in 1935, majoring in architectural engineering. He joined Continental Oil Company that year as a junior map clerk at Ponca City, Okla. He has served in various capacities in Conoco's drafting and engineering divisions, his most recent position being coordinating engineer for the Rocky Mountain region, with headquarters at Denver.

(*Men and Jobs continued on page 79*)

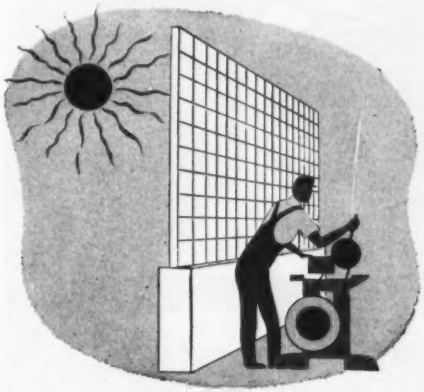
FACTS YOU SHOULD KNOW ABOUT THE

insulating value

OF PITTSBURGH CORNING GLASS BLOCKS



QUESTION . . . In our fenestration, how can we get the insulating values of masonry and the light-transmitting properties of glass?



ANSWER . . . Install panels of PC Glass Blocks. The dry, dead-air space between the tightly sealed halves of these glass blocks provides them with better insulating qualities than an 8-inch brick wall; more than twice the insulating value of ordinary windows. Made of clear glass, PC Glass Blocks transmit floods of natural daylight—fully controlled for maximum comfort and efficiency.

Because PC Glass Blocks are made of two pieces of formed glass, fused together and enclosing a partial vacuum, their insulating value is better than that of an eight-inch brick wall; they offer more than twice the insulating value of ordinary single-glazed windows. Building owners in a typical midwestern city have found that PC Glass Blocks, in place of conventional multipaned windows, save up to 30% on winter heating costs.

When you install panels of PC Glass Blocks, temperature and humidity control is easier and less costly than with other types of fenestration. In summer, heat gain is lower; in winter, heat loss is reduced. They thus lighten the load on heating and air-conditioning equipment; they reduce costs, improve product quality, create more comfortable surroundings for workers.

Whatever your fenestration problem may be, let our specialists help you. There's no obligation.

Other Facts: PC Glass Blocks cut maintenance costs; admit abundant controlled daylight; assure privacy; eliminate outside noises; stop the infiltration of dust and grit; *are immediately available.*

Distributed by Pittsburgh Plate Glass Company; W. P. Fuller & Co. on the Pacific Coast; Hobbs Glass Ltd. in Canada; and by leading distributors of building materials everywhere.

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Go by these plain, hard Facts . . . and SAVE!

CHEVROLET Advance-Design TRUCKS

Fact No. 1

Saves you money on purchase

Check the price on a Chevrolet truck that's the right size, type and capacity to handle your work. You're going to find that this Chevrolet truck lists for less than any other make of truck capable of doing the job. Here's an immediate, cash saving.

Fact No. 2

Cuts operating costs

Day in, day out a Chevrolet truck works for rock-bottom "wages" on fuel and upkeep. It brings you the proved economy of Valve-in-Head engine, with 4-Way Lubrication to reduce engine wear. Extra-rugged features cut maintenance costs.

Fact No. 3

Gives you the right truck for the job

Chevrolet trucks are factory-matched to the job—tires, axles, frame, springs, engine, transmission, brakes. It's the Chevrolet idea to provide you with exactly as much truck as you need and no more. Chevrolet truck users know this idea pays off.

Fact No. 4

Saves money on trade-in

It's right in the records that Chevrolet trucks traditionally bring more money on the used truck market—and that can mean more money for you when you trade or sell. There's another reason why more truck users choose Chevrolet than any other make.

CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

TWO GREAT VALVE-IN-HEAD ENGINES—Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load • POWER-JET CARBURETOR—for smooth, quick acceleration response • DIAPHRAGM SPRING CLUTCH—for easy-action engagement • SYNCHRO-MESH TRANSMISSION—for fast, smooth shifting • HYPOID REAR AXLE—for dependability and long life • TORQUE-ACTION BRAKES—on light-duty models • PROVED DEPENDABLE DOUBLE-ARTICULATED BRAKES—on medium-duty models • TWIN-ACTION REAR BRAKES—on heavy-duty models • DUAL-SHOE PARKING BRAKE—for greater holding ability on heavy-duty models • CAB SEAT—with double-deck springs for complete riding comfort • VENTI-PANES—for improved cab ventilation • WIDE-BASE WHEELS—for increased tire mileage • BALL-TYPE STEERING—for easier handling • UNIT-DESIGNED BODIES—for greater load protection • ADVANCE-DESIGN STYLING—for increased comfort and modern appearance.

CHEVROLET DIVISION OF GENERAL MOTORS, DETROIT 2, MICHIGAN

CHEVROLET first in demand in value in sales

Kidde Company high post goes to Taylor Milton

Walter Kidde Constructors, Inc., engineers and builders, announced last week the appointment of Taylor Milton as vice president.

Milton has been vice president and chief engineer of Walter Kidde Engineer-Southwest, Inc., a subsidiary with headquarters in Houston. He will continue in this capacity, in addition to carrying out his new duties.

A member of the Walter Kidde Constructors organization for several years, Milton was formerly associated with the Austin company in Michigan and New York, and was also an instructor in the School of Architecture of Columbia University. Prior to that, he was employed by various architectural firms in Texas as engineer and chief designer. During the last war, Milton served as a public works officer for the U. S. Navy.

Milton is a graduate of Texas University and holds a master's degree from Columbia University. He is a registered professional engineer and a registered architect.

Construction firms combine

Wm. P. Neil Co., Ltd. and Buttress & McClellan, Inc., two of the southwest's leading construction firms, announce their association under the firm name National Panelcrete, Inc. Purpose of the new organization is to make available to the building and contracting industry their successful techniques of precast tilt-up construction and to license their use on a nation-wide scale. The new firm's headquarters will be in Los Angeles.

THE VICTAULIC® METHOD OF PIPING

EASIEST WAY TO MAKE ENDS MEET

The VICTAULIC METHOD is a *complete* line of Victaulic Couplings, Full-Flow Fittings and Vic-Groover Tools for mechanical piping construction. It's the easy way to hook-up pipe . . . it's fast and versatile . . . it's *complete and all-inclusive!* Use the VICTAULIC METHOD and you streamline piping . . . cut costs!

The Easy-to-use Victaulic Coupling . . . world-famous for quick, leak-proof connections . . . is the basic element of the VICTAULIC METHOD. For use with this coupling, Victaulic offers a complete line of top efficiency Full-Flow Elbows, Tees, Reducers and other Fittings . . . PLUS Vic-Groover Tools for preparing pipe ends easily and quickly right on the job!

Mis-alignments, expansion and contraction are automatically taken care of by Victaulic, locked-joint, leak-tight piping is assured. For new construction, repairs or alterations . . . for any piping job, big or small, the VICTAULIC METHOD *is the easiest way to make ends meet.*

The name VICTAULIC is more than a trademark . . . it stands for world leadership in a speedy, dependable piping method . . . backed by unexcelled engineering and years of proved experience. FOR YOUR OWN PROTECTION . . . be sure you get VICTAULIC!

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The Central Maintenance Building, Division of Highways, State of California, was only recently constructed . . . using Alcoa Aluminum Building Sheet exclusively for roofing and siding.
Contractor-Erector:
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THE STATE ARCHITECTS SPECIFIED

ALCOA

BUILDING SHEET

DIVISION OF HIGHWAYS STATE OF CALIFORNIA

Big, tough, easy-to-handle units of Alcoa Industrial Building Sheet helped speed the construction of this highway maintenance building. With the installation of the last fastener, the job was complete . . . ready for occupancy. Typical of the low-cost, low-upkeep buildings made possible by aluminum.

Light weight Alcoa Industrial Building Sheet (only 56 pounds per square) reduces dead load. Goes up faster, requires no finishing . . . no painting.

Compare the advantages offered by aluminum with those of any other material. Next time *you* figure a building job, figure it in aluminum . . . Alcoa Aluminum Building Sheet.

FACTS FOR ENGINEERS

Alcoa Industrial Building Sheet may be erected over steel or wood; and there is a fastener for every type of job.

Lengths: 5 to 12 feet.

Widths: Roofing, 35 inches—Siding, 33¾ inches (32-inch coverage).

Thickness: .032 inches—equal to 22 U. S. Gauge.

For complete engineering and application details, write for booklet AD-167.

ALUMINUM COMPANY OF AMERICA

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ALCOA

INDUSTRIAL BUILDING SHEET

OBITUARIES

Henry J. Sherman, 82, senior member of Sherman, Taylor & Sleeper, engineers, Camden, N. J., died at Moorestown, N. J., July 29. He was a C. E. graduate of Lehigh University in 1890. He served two years in the engineering department of the District of Columbia and four in the Philadelphia Department of Public Works. He was named chief engineer of the N. J. Department of Inland Waterways in 1908, supervising the N. J. Inland Waterway from Cape May to Bay Head, a distance of 117 miles, and its extension, the Bay-Manasquan canal. He served as consulting engineer for the Board of Commerce and Navigation of New Jersey on plans for coast protection, aided in the establishment of the South Jersey Port Commission to develop the New Jersey side of the Delaware, and supervised the engineering work of the New Jersey-Delaware boundary dispute, which included valuation of $10,000,000 worth of waterfront structures in the contested area. He was vice-president of the ASCE 1949-51, and a director 1933-35.

Lloyd A. Blanchard, 58, who for the major part of his eleven years' service in the federal government was closely identified with safety practices in the construction industry, died July 26 in Washington, D. C. During the war he headed the safety program of the Construction Division of the Quartermaster Corps and later of the Corps of Engineers. As assistant to the chairman of the Federal Interdepartmental Council, he did much to improve safety practices in all government departments. He was active in the National Safety Council and served on its board of directors. At the time of his death he was director of the Rescue Division of the Federal Civil Defense Administration.

Archie Philip Owens, 79, former superintendent of waterworks at Sullivan's Island, suburb of Charleston, S. C., died in Charleston July 25. He served for some time as a member of the Charleston County Sanitary and Drainage Commission (road department) and as a member of the State Planning Board.

Dow H. Young, 62, superintendent of the Salt Lake City waterworks and water supply, died July 21. A graduate of University of Utah school of engineering he started in the Salt Lake city engineer's office in 1919.

(*Obituaries continued on page 82*)

CUT
Your CLEARING COSTS
Down to Earth with a

HOMELITE One Man Chain Saw

27 POUNDS
4 HORSEPOWER
MORE POWER PER POUND THAN ANY OTHER SAW

When trees are in the way of the job, cut them down with a Homelite One Man Chain Saw. It's the fastest, easiest, most economical way to do it . . . cuts your clearing costs down to earth.

With this saw, one man can bring down an 18" pine in 16 seconds or an 18" oak in 28 seconds. He can cut trees 48 inches in diameter *or more*. He can do his bucking, limbing . . . clear the whole mess out of there . . . in no time.

Only 27 pounds . . . easily operated by anyone . . . a Homelite has more power per pound than any other saw its size. Because it's the only saw its size with a 4 horsepower engine . . . a *Homelite* engine famous for dependability for more than thirty years.

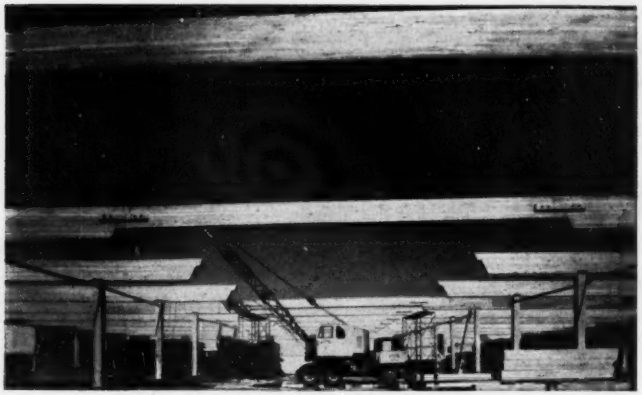
Ask for free demonstration. Try it yourself. You'll be amazed at its outstanding performance.

Manufacturers of Homelite Carryable Pumps • Generators • Blowers • Chain Saws

PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE CORPORATION

1108 RIVERDALE AVENUE • PORT CHESTER, N.Y.



Cantilevered glulam beams support roof of this 200′ x 360′ warehouse of MacRae Brothers, general contractors, of Seattle, Washington.

Modern Mill-Type Construction Uses Cantilevered Glulam Beams

Here is the skeleton of a profitable building investment — an illustration of permanent, maintenance-free construction which meets the requirements of strict fire ordinances and functional, efficient use.

Beam roof structure eliminates unused cubage, with worthwhile savings in cost and upkeep; and cantilevered design provides large economical areas of open floor space required for easy warehousing. Use of these heavy beams with walls of pre-cast concrete panels and laminated 2″ x 4″ roof deck, gave the owner a building which will resist destruction by fire to a degree matched only by much more costly construction.

Beams were made by Timber Structures, Inc., pioneer in glued lamination, the science of joining seasoned lumber with glues as strong and permanent as the wood. Finished timber is free from seasoning action, "stays put" without maintenance.

For complete information on glulam beams, fill in and mail the coupon for booklet, "Engineered Timber Construction."

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P. O. Box 3782-C, Portland 8, Oregon

Offices in New York; Chicago; Detroit; Kansas City; Dallas; Rochester, Minn.; Seattle; Spokane

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OBITUARIES

Robert Follansbee, 73, retired federal engineer, died at Denver, Colo., July 22. He was a 1902 graduate of Cornell, and was a district engineer of the U. S. Geological Survey water resources branch for more than 40 years continuously.

John Heaslip, Jr., 59, assistant civil engineer of the N. Y. City Department of Parks for the last 10 years, died at Shelter Island Heights, L. I., N. Y., Aug. 2.

W. V. Smiley, 74, federal highway engineer, died at Oklahoma City, Okla., July 30. A graduate of Virginia Military Institute, he served 6 years as assistant division engineer of the B&O R.R., two years in a similar capacity with the Missouri Pacific Lines, and then 27 years in Oklahoma as resident engineer for the U. S. Bureau of Public Roads, retiring in 1948. He helped develop more than 6,000 miles of roads in that state.

Carl M. Nye, 78, retired civil engineer identified with many major railroad projects in this country, South America and Arabia, died at Chatham, Mass., on July 27. For 30 years he had worked for the Great Northern Railroad, St. Paul, Minn., and was at one time a consultant for the Morrison-Knudsen Co., San Francisco. He was a graduate of the University of Illinois and served in the U. S. engineers in the first World War.

George W. Langford, 65, retired building contractor, died at Louisville, Ky., July 28. His company, the Langford Construction Co., had built about $15 million worth of hotels, apartment houses and office buildings at Miami Beach and Palm Beach, Fla.

Walter E. Garrison, 75, former California director of public works, died in Rio Del Mar, Calif., July 16. He served as public works director from 1931 until 1933.

Walker J. Boudwin, 64, a leading Nevada contractor and owner of a construction firm bearing his name, died in Reno July 16. A graduate of Temple University, he had been active in contracting since 1920, when he founded the Walker Boudwin Construction Co. He was contractor on many building projects in Nevada, including the Veterans Memorial School in Reno, the state office building at Carson City, and, in addition, a number of buildings at the state mental hospital.

just a TWIST of the wrist!

. . . That's about all it takes to restore new pump efficiency to Rex® Centrifugal Self-Priming Pumps even after many, many hours of rugged service. In every self-priming centrifugal pump, the air peeler is the most important single factor in priming efficiency. Rex is the only pump with an *adjustable* air peeler.

HERE'S HOW SIMPLE IT IS! Just remove cover plate . . . remove one bolt . . . drop peeler to just clear impeller . . . tighten the setscrew . . . replace the cover plate . . . and you've restored original priming efficiency.

There are only 6 basic parts to a Rex Pump (see illustration) . . . all readily accessible for quick, easy maintenance and replacement.

This simplicity means *longer pump life . . . sustained efficiency* and, above all, more *economical operation*—with Rex there's less chance for trouble . . . far lower maintenance costs . . . more gallons of water pumped per dollar of fuel and per dollar of cost.

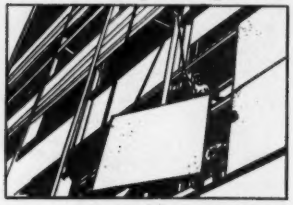
See the new Rex line of Self-Priming Centrifugal Pumps at your nearest Rex Distributor, or write for Bulletin 51-37, which contains the complete story. Chain Belt Company, 4633 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT REX COMPANY ®

CONSTRUCTION MACHINERY . . .

Marietta Concrete Wall Panels save 30% of new building costs

A revolutionary new development in precast insulated concrete wall panels is currently saving a large industrial firm as much as 30% on the construction of its new, multi-million dollar plant expansion.



These panels are designed for quick erection of curtain walls. A nine man crew is erecting 3,500 sq. ft. of finished wall in a day. The panels are made of high strength concrete and are cast solid, or cast with concrete facing and rigid insulation core. Marietta engineers report that tests show these panels have compression strengths over 4,000 psi. and an insulating U-value of 0.14, surpassing the usual 12-inch masonry wall in both these properties. Panels are cast in modular sizes to meet every building requirement. Full details and engineering service are available by writing to The Marietta Concrete Corporation.

Marietta Concrete Industrial Storage Systems cut material handling costs

Marietta concrete industrial storage systems are being used by a wide variety of leading industries for safe, permanent, low-cost storage and materials handling facilities. These concrete stave silos are available in any size, any arrangement to meet present and future storage requirements. They're designed for labor-saving, large capacity, efficient storage and will protect stored bulk raw materials from fire, moisture, air and acids at low cost. A complete Marietta storage system, including necessary materials handling equipment, can be designed and quickly erected to solve your storage needs. Write for full details.

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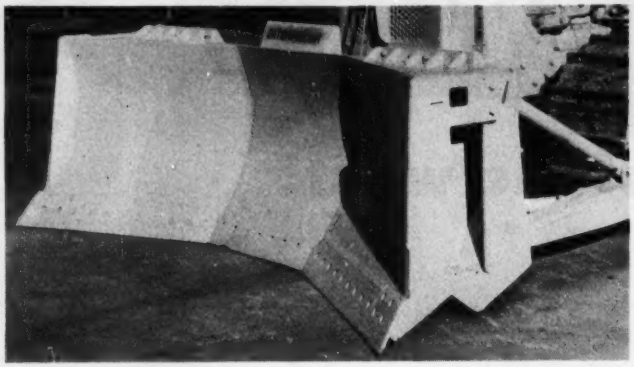
NEW PRODUCTS



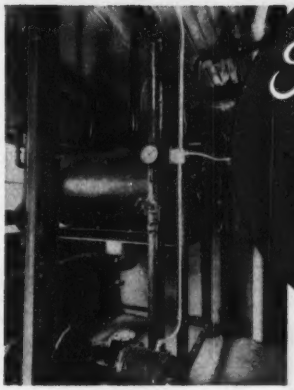
Angle wing attachment for bulldozers

Although the new Shepherd angle wing attachment here is mounted on the front of a Caterpillar D6, they are available for all makes and types. According to the manufacturer they provide all the advantages of a U type blade for carrying increased yardage through further travel as well as an ability to side cast, back fill and pioneer hillside cuts, excavations and roadways by using a single wing. Readily removable for pusher operations, the angle wing blades have been sold and mounted on bulldozers for many contractors. SHEPHERD TRACTOR & EQUIPMENT CO., ATLANTIC & BANDINI BOULEVARDS, LOS ANGELES 22, CALIFORNIA.

Rex Mixers can carry top legal load

The most valuable legal payload space on a transit mixer is just behind the truck cab. Rex engineers had this in mind when they designed their new 5½ and 7-yd Hi-discharge Moto-Mixers which carry payload, and not machinery, in this area. Here the last bit of mix chutes out of a 5½-yd rig owned by R. F. Kirkpatrick & Sons of Burlington, North Carolina on their Celanese Corp. plant addition job there. E. F. Craven Co., distributors in Greensboro report that the new "flip-flop" charging hopper at the end of the drum is meeting with a great deal of approval. It allows optional rear-end charging or filling through the regular

(*Continued on page 86*)



Ford Motor Company

The Ford Motor Company's traditional practice of selecting materials to meet service conditions is evidenced by the use of Byers Wrought Iron pipe for condensate return lines in the Company's new Automatic Transmission Plant, Cincinnati, Ohio. A portion of the piping installation in this modern, one story plant addition is shown in the small photograph. Peck-Hannaford and Briggs, Cincinnati, were the heating contractors on the project.

Maintenance records provide plenty of examples of the consequences of using non-durable material for this service. Condensate is invariably aggressive, and while treatments of various kinds may help, the only basic solution is the installation of a corrosion-resistant material. Genuine wrought iron pipe has been so uniformly successful in this service that it should be considered whenever you are aiming at longer life, at lower cost per year.

Our bulletin, WROUGHT IRON FOR PIPING SYSTEMS, discusses some of the corrosive conditions found in various services and illustrates a few of the many places where engineers have found greater economy in the longer life of genuine wrought iron. Write for your copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N. Y.

Why
Genuine Wrought Iron Lasts

This notch-fracture test specimen illustrates the unique fibrous structure of genuine wrought iron—which is responsible for the high corrosion resistance of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, halt and disperse corrosive attack, and discourage pitting and penetration. They also anchor the initial protective scale, which shields the underlying metal.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

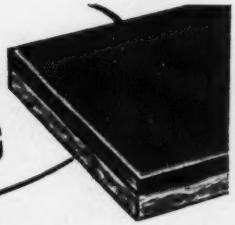
WROUGHT IRON

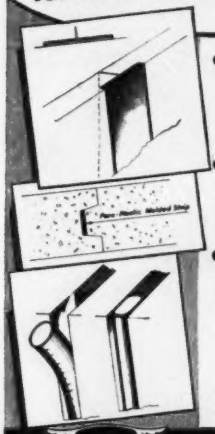
TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

Servicised

Premolded *Para-Plastic** for effective JOINT SEALING





• PARALATERAL Wide Strip

For sealing vertical construction or expansion joints in Retaining Walls, Abutments, Wing Walls, Foundations, etc., particularly when one side will be backfilled and protection from water seepage is necessary. Has rigid backing of asphalt joint material and surface and both edges coated with Para-Plastic, which maintains bond with concrete at all times.

• MOLDED STRIP

Para-Plastic Sealing Compound is molded into strips for sealing of keyed construction joints and cracks or breaks in vertical concrete surfaces. Concrete poured against the strip, after setting up, will bond with strip to form watertight seal.

• NARROW STRIP Pressure Seal

Para-Plastic Pressure Seal is available in both Solid Para-Plastic, and Para-Plastic coated sponge rubber types which are rectangular or square in cross section. Designed for sealing existing expansion joints or contraction cracks in vertical or sloping masonry walls and surfaces.

Servicised Engineers are available for consultation on your joint sealing problems. Write for details and specification data. There is no obligation.

*Para-Plastic is one of the many Patented products developed for the Construction Industry by Servicised Products Corp.

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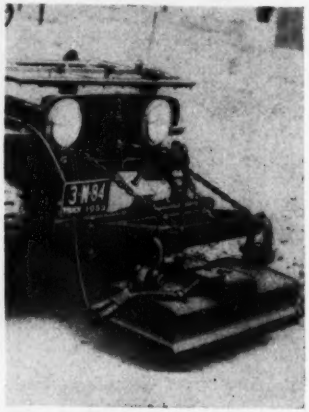
. . . And this bridge will open. But upon your first call, The Earle Gear and Machine Company will be ready to serve you with all of their experience, skill and facilities. Famous for efficient and unfailing bridge operating machinery, Earle Gear can also provide—promptly and accurately—almost any size and type of gear. Earle engineers are always available and pleased to assist you. In many cases, our accumulated knowledge and experience can materially *lower* the costs . . . or *increase* the efficiency of your machines. Write for information, catalogs or service. THE EARLE GEAR & MACHINE COMPANY, 4717 Stenton Avenue, Philadelphia 44, Pa.

It's good business to do business with EARLE

EARLE GEARS

NEW PRODUCTS

drum hatch. Then, with a flip, it also allows closed-end mixing. The entire gate-hopper combination can be lifted clear for full end opening and fuller, speedier discharge when needed. Water is introduced into the mix at the front, right through the drum bearing. The hose you see coming up from the mixer engine is for clean-out. The company assures users that they will never have to lubricate, maintain or replace a seal for the entire life of the machine. CHAIN BELT COMPANY. MILWAUKEE, WISCONSIN.

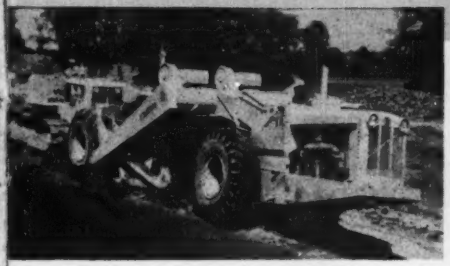


Road sweeping magnets help police highways

Recent surveys conducted by bus and truck operators, tire companies and parking lot operators have shown that more tires are punctured by ferrous metal pieces than by all other causes combined. These results prompted an enterprising manufacturer to develop and introduce a new line of road sweeping magnets for picking up nails and tramp iron from highways, public and factory parking lots and airport runways. Of sturdy fabricated steel construction, Ohio Road Sweeping Magnets are lightweight, with special eyelets for attachment to any truss-type structure on front of a truck or jeep. In most installations the magnet can be raised or lowered by the driver. A gasoline-driven generator energizes the magnet controller, with both units mounted in the truck. An on-off switch is within easy reach on the instrument panel. A number of different lengths are available for single or multiple magnet installations. THE OHIO ELECTRIC MANUFACTURING CO., 5900 MAURICE AVENUE, CLEVELAND, OHIO.

("New Products" continued on p. 90)

"Moves wet clay at lowest cost"



. . . says Mike Welch

His 2 C Tournapulls outhaul 2 crawler-scrapers, 3 to 1

When Contractor Mike Welch of St. Paul, Minnesota, started an 80,000-yd. road relocation in Wright County, he found the ground unusually wet. About 13" of rain had fallen during the previous 20 days. Conditions didn't improve much either, after he drove in 2 electric-control C Tournapulls to handle most of the dirtmoving. Four flowing springs were uncovered in the grading, and rain fell 14 days in the following 4 weeks. Despite these handicaps, the "C's" worked 150 hours the first month and maintained a 98% mechanical efficiency record. Says Owner Welch, "We believe our Tournapulls handled the wet clay and other material on this job more efficiently and at lower cost than any other type of equipment could have done."

In all, Welch's two 14-yd. "C's" moved 75% of total yardage, while two crawler-scraper rigs — one 18, the other 15 yds. heaped capacity — working the shorter hauls, moved only 25%. Contractor Welch estimates his Tournapulls, when working conditions are "fair", deliver 20 loads per hour on a 900' haul.

Ideal for county roads, says Welch

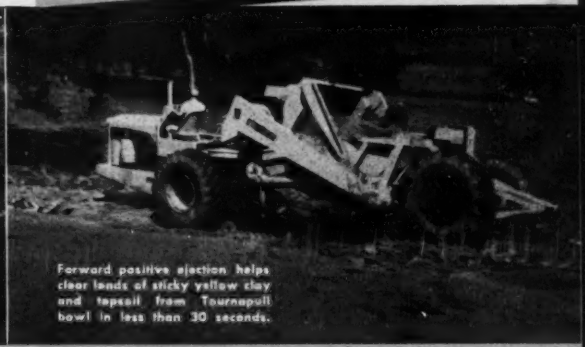
There are lots of reasons for Tournapulls' 3-to-1 production advantage on this wet Wright County assignment. Big 21.00 x 25 low-pressure tires and power-proportioning differential pulled these 18-ton dirtmovers easily and rapidly through the mud and gumbo. Constant-mesh transmission with torque converter delivered maximum horsepower at all speeds . . . simple fingertip electric controls reduced operator fatigue, increased end-of-day efficiency. Ability to turn around in a 15' radius was also of great importance in the restricted cut and fill areas. As Welch says, "Tournapulls will turn shorter than any other rubber-tired equipment I know of. This is the reason we purchased them for our county road jobs."

Tournapull—Trademark Reg. U. S. Pat. Off. P1BH-b

Get job-report facts TODAY

If you, too, are interested in dependable day-in, day-out performance—faster loading, faster hauling, faster spreading, more pay loads per hour at lowest-net-cost-per-yard — call your Phillippi-Murphy salesman. He'll be glad to show you how new 18-ton, 35 m.p.h. C Tournapulls can increase your profits, too.

Spongy haul roads held travel speeds below normal. Coming to this job over pavement from Washington County, however, the "C" frequently hit 35 m.p.h.



Forward positive ejection helps clear lands of sticky yellow clay and topsoil from Tournapull bowl in less than 30 seconds.

LeTOURNEAU EQUIPMENT

R. G. LeTOURNEAU, INC.

Peoria, Illinois

WATER Paces Gary's Business Growth!

Allis-Chalmers Helps Indiana's Fastest

INDIANA'S FASTEST GROWING CITY knows that an adequate water supply is necessary for future growth. Gary, one of America's few planned cities, has zoomed to its present 135,000 population (Indiana's second greatest) in less than 50 years.

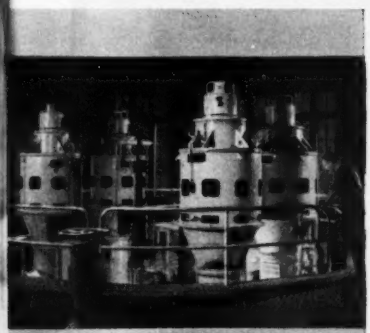
And planning for a still bigger future, Gary recently installed these Allis-Chalmers pumps and motors to create capacity adequate for population *doubling!* With over 123 local industries — including the world's largest complete steel mill, sheet and tin mill, and cement plant — Gary is wise to allow for plenty of future growth.

The Gary-Hobart Water Corporation operation also is unusual in that all city water comes through a Lake Michigan suction tunnel 6 ft in diameter and *three miles long.* When power fails, this moving column of water can cause a surge flooding the main pumping station.

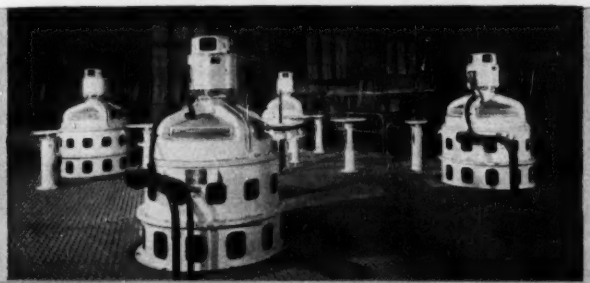
With the original horizontal pumping units, a surge rendered motors inoperative for some time. The four new Allis-Chalmers vertical mixed flow units were made 57 ft long so that the impellers are kept submerged despite "draw down" and yet the 350 hp motors cannot be flooded. Fifteen foot extensions protect the motors for the four high head units.

When *your city* plans expansion or modernization, do as Gary and other leading cities are doing — take advantage of Allis-Chalmers experience in municipal pumping equipment. Ask for Pump Bulletin 08B6146A, containing 24 pages fact-packed with the kind of engineering data you'll want to keep handy. Just call your nearest A-C sales office or write to Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3792



LOW LIFT PUMPS in the 100 ft deep well at tunnel's end are 36 x 24 in. mixed flows, each rated 15,000 gpm against 50 ft head; driven by 350 hp, 720 rpm synchronous motors. Units were made 57 ft long to avoid motor flooding in case of power failure. In 1951, Gary's peak pumpage rate for one hour was 44 M.G.D.

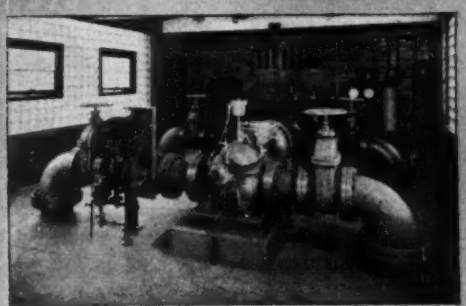


HIGH HEAD PUMPS are 24 x 18 in. centrifugals, each rated 14,000 gpm against 160 ft head; driven by 700 hp, 720 rpm synchronous motors. The high head units pump directly into the mains, operating in series with the mixed flow pumps. Special 15 ft high barrel type supports keep the motors out of flooding danger.

Growing City Expand Water Works

METROPOLITAN GARY, the planned city built on the sand dunes at the lower end of Lake Michigan. Portions of steel mills and lake are seen in the distance.

GREAT FLEXIBILITY at the main pumping station is provided by the header and valving arrangement. Operation can be varied from only one high head unit in service — pumping directly from well to mains and adequate for light loads — to all eight units pumping simultaneously — adequate for Gary population doubling.



GLEN PARK BOOSTER STATION is also exclusively Allis-Chalmers. These two 12 x 12 in. centrifugal pumps are each rated 3200 gpm against 115 ft head; driven by 50 hp, 1160 rpm induction motors. To maintain constant pressure, they are automatically remote-controlled from the water tower.

ALLIS-CHALMERS

A-C ALLIS-CHALMERS

Builders of the World's Widest Range of Public Works Equipment

Lay bigger tonnage, yet cost 50% less

Up to 12" thickness in widths to 11', lesser thicknesses to 12'6"

JAEGER Paver-Type Aggregate Spreaders

Cost half the price of bituminous pavers. Efficiently lay both base and surface aggregates, free-flowing bituminous mixtures, plant-mixed stabilized soil. Crawler or 4-wheel drive operates on subgrade, not on new-laid material. Two models, to work with all sizes of trucks.

Lay both base and top of parking areas, drives, secondary roads: Any free-flowing bituminous material or macadam surface.

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CONCRETE SPREADERS, FINISHERS • COMPRESSORS • PUMPS • MIXERS • HOISTS • TOWERS

ENGINEER WITH A WEIGHTY PROBLEM

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Irving Aluminum Grating is the solution where Strength and very Light Weight are wanted. Spark Proof. Rust Proof.

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Indoor and Outdoor Models

For permanent installation on industrial projects or temporary use on construction jobs Minimum upkeep Selective or common ringing and semi-selective or common talking.

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NEW PRODUCTS

New dipping process coats steel with aluminum

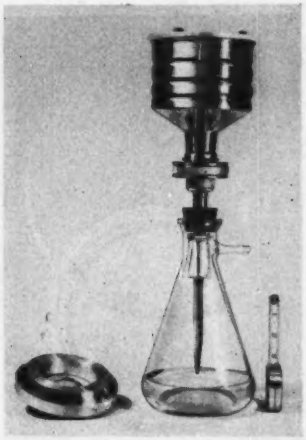
A new dipping process for coating steel and other ferrous metals with aluminum was recently disclosed by the research labs of General Motors. Importance of the new process is twofold: it can replace zinc-coated metals in some applications as a corrosion- or rust-resistant coating, and when diffused by heat treatment, it becomes a heat-resistant material and may conserve a number of strategic alloys now used in high temperature applications.

The new dipping process has been labeled "Aldip" and can either be used to coat parts or components, or can be a continuous process for coating sheet, wire or rod stock. GM's research lab is already producing aluminum-coated steel manifolds for the Detroit Diesel Engine Division as well as applying Aldip on heat exchangers for auxiliary tank motors for the Harrison Radiator Division.

The process is this: The item is dipped in an alkaline cleaner, washed in hot water, run through an acid pickle, rinsed in cold and hot water and dried in a furnace until ready for coating. These steps remove grease, oil, paint, etc. Next comes a dipping for four minutes in a preheated salt (1280 to 1400 deg F) and finally immersion in an aluminum bath covered by a ½-in. layer of salt flux for 30 seconds to one minute. While still red hot thereafter, it's returned to the preheat salt bath and slowly raised. Airblasting removes excess aluminum. Several applications, particularly in the automotive field, are under test. GENERAL MOTORS CORP., 1775 BROADWAY, NEW YORK 19, N. Y.

All metal spray gun is electrically-operated

Large industrial organizations like Westinghouse and duPont have used the new Champion all-metal spray gun, with satisfactory results, for spraying paints, lacquers, enamels, insecticides, deodorants and the like. A high-speed electric pumping device precludes the need of a compressor and is said to deliver over 90 lb of pressure at 7,200 strokes per minute. It's a self-contained appliance of stainless steel with a vibrator motor in the handle. A 25-oz flint glass jar and a UL-approved 8-ft cord come with every model and 110-v, ac power will operate it. It's easily cleaned and is available from CHAMPION IMPLEMENT CORP., 45 WEST 45TH STREET, NEW YORK, N. Y.



FILTER HOLDER—to which bicycle pump can be hooked to create vacuum—is a fairly rugged piece of equipment suitable for field use.

New molecular filters can be mailed to lab

The molecular filter—closely guarded Army secret until a year ago—is now commercially available for concentrating and culturing microorganisms in water analysis. Trade-named Millipore Filters and mass produced in 47-mm disks or 22x18-in. sheets, this filter is claimed capable of water supply bacterial determinations in 6 to 18 hours, coliform analyses in 18 to 20 hours instead of 4 to 5 days.

It is said that these filters save at least $1.50 per water examination. Multiplied out by 26,000 water laboratories in the country and an estimate of three tests per day in each, this produces an annual saving on the order of $43 million.

As reported previously in these pages, the U. S. Public Health Service is actively promoting use of the molecular filter. A familiarization course was run this spring at the Environmental Health Center in Cincinnati. And on July 1 there began controlled, in-service tests of the filter to last one year at about a dozen state and big-city laboratories across the country.

The filtering medium (still a secret) has uniform cell structure—about $50x10^6$ pores per cm^2—likened to a submicroscopic honeycomb. Filtered microorganisms can be cultured right where trapped on the upper surface of the filter, simply by placing the filter, bottom down, on a wetting liquid nutrient. And filter disks can

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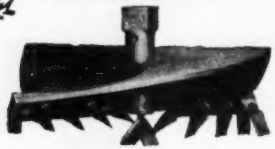
THE PENGO EARTH AUGER



★ Twin helix—no back thrust!

★ Bores true, clean holes in any soil, most sandstones and hardpans, frozen ground, permafrost!

★ All wearing parts replaceable on job!

★ Made in 15 sizes, 10" to 54" hole diameters, to fit all makes of heavy-duty earth boring machines. Larger sizes on order.

THE PENGO CUTTING HEAD

★ Easy installation—welds to your present helix.

★ Bores where you never could before!

★ Wearing parts are replaceable on the job and are interchangeable with PENGO Auger parts. *(Described at left.)*

★ Made in 9 sizes, 8" to 24" diameters. Larger sizes on order.

THE PENGO WISDOM TOOTH

★ All PENGO Augers and Cutting Heads are equipped with the drive-on PENGO Wisdom Tooth, specially designed for use on earth augers; cast from special abrasion and shock-resistant steel alloy for far longer service life!

"Get the PENGO WISDOM TOOTH—It knows how to bore holes!"

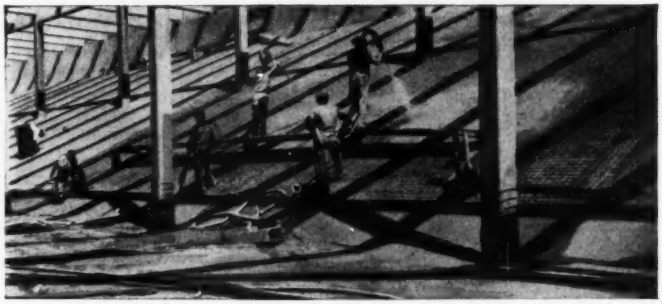
ORDER TODAY—OR SEND FOR LITERATURE, PRICES

PETERSEN ENGINEERING CO.

MANUFACTURERS

SANTA CLARA, CALIFORNIA

"GUNITE" Lining Restores Reservoir



When the old, open Ballou Park Reservoir at Danville, Va., was improved and covered in 1948, excessive leakage of the old brick lining was stopped with reinforced "GUNITE". The photo shows details of the process. After concrete columns to support the roof were placed, wire mesh reinforcing was laid and the entire reservoir was "GUNITED". Note that the reinforcing and "GUNITE" were carried over the column footings and up the columns approximately three feet to prevent leaking at those points.

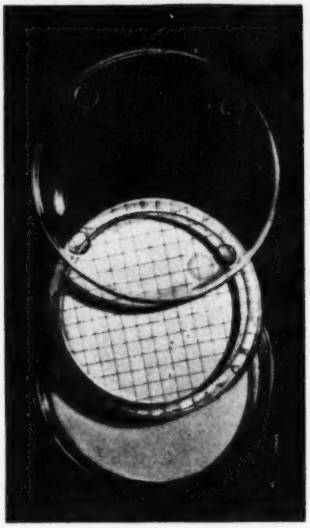
The use of "GUNITE" for repair and construction of reservoirs, bridges, buildings, etc., is illustrated and described in Bulletin A2400. We will gladly send a copy at your request. On your letterhead, please.

CEMENT GUN COMPANY

"GUNITE" CONTRACTORS

GENERAL OFFICES—ALLENTOWN, PENNA. U.S.A.

MANUFACTURERS OF THE CEMENT GUN



POCKET INCUBATOR — disposable petri dish and molecular filter—can be in mail on its way to lab as filtered microorganisms culture.

be filed away as permanent records. Printed squares on disks divide area into 1/100ths, making count approximations easy.

Flowrate through the filter, which is 80% voids, is 72 ml (distilled water at 21°C) per cm² per minute at a pressure differential of 70 cm of mercury.

The manufacturer produces pyrex and stainless steel filter holders—resembling Silex coffee-makers—in which the necessary vacuum can be produced to draw the sample through. The device is conveniently adaptable to field use, small laboratories and rural areas.

The 47-mm disks come in packages of 20 or 100—Lovell Chemical Company, Watertown 72, Mass.

Liquid level attachment for Adnun blacktop paver

You can now get a newly-developed liquid level for attaching to an Adnun blacktop paver to give positive leveling control in paving and aggregate spreading. Said to permit leveling-up of old roads, the device will allow accurate correction for any slope at any station. It's also said to hold a level grade without modifying desired crown, and will level up old shoulders, blending the course into an old crown. All these adjustments are possible only because the Adnun's cutter bar screed

(*Continued on page 94*)

Easy to Order! . . .

. . . Quick and Easy to Install!

Grinnell Welding Fittings

Any qualified welder can make welds quickly and easily with Grinnell welding fittings. These fittings are made by a hydraulic forging process that assures uniform wall thickness at all points and true circularity throughout. Of seamless, one-piece construction, they can be cut at any angle to match up with standard weight, extra strong and heavier wall pipe in I.D. or O.D. sizes. Pressure-temperature ratings are equal to or greater than those of seamless steel pipe. Grinnell welding fittings are process stress-relieved.

Full data on the complete line of Grinnell seamless carbon steel welding fittings and forged steel flanges is contained in the Grinnell Welding Fittings catalog. Send for a copy.

GRINNELL
WHENEVER PIPING IS INVOLVED

RANGE OF TYPES AND SIZES

Description	Standard Weight	Extra Strong	Schedule 160	Double Extra Strong	Light Gauge	
					Nominal Pipe Size	Iron Pipe Size
ELBOWS						
90° Long Radius	½"-30"	½"-30"	1"-12"	¾"-8"	4"-24"	¾"-12"
90° Long Tangent	1½"-12"	1½"-12"	.....	.....	.....	.....
90° Reducing	2"x¾" to 6"x5"		.....	.....	.....	.....
90° Short Radius	1"-30"	1½"-30"	.....	.....	.....	.....
45° Long Radius	½"-30"	¾"-30"	1"-12"	¾"-8"	4"-24"	¾"-12"
RETURNS						
180° Long Radius	½"-30"	½"-30"	1"-12"	2"-8"	4"-24"	¾"-12"
180° Short Radius	1"-30"	1½"-30"	.....	.....	.....	.....
180° Ex. Long Radius	1"-2½"	1"-2½"	.....	.....	.....	.....
TEES — Straight	½"-24"	½"-24"	½"-12"	½"-8"	.....	.....
Reducing Outlet	½"-24"	½"-24"	¾"-12"	¾"-8"	.....	.....
REDUCERS Concentric & Eccentric	¾"-24"	¾"-24"	¾"-12"	¾"-8"	.....	.....
CAPS	¾"-24"	¾"-24"	1"-12"	1"-8"	.....	.....
STUB ENDS — Lap Joint	½"-24"	½"-24"				
SADDLES	2"-24"					
LATERALS — Straight	1¼"-24"	1¼"-24"				
Reducing	1¼"-24"	1¼"-24"				
CROSSES — Straight	1¼"-24"	1¼"-24"				
Reducing	1¼"-24"	1¼"-24"				
BACKING RINGS	2"-24"	2"-24"				

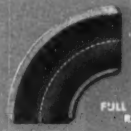
Also available in certain sizes are: 90° long and short radius elbows, 45° long radius elbows and 180° long and short radius returns in Schedules 30, 40, 60 and 80.

Grinnell welding fittings and flanges conform to applicable ASA and ASTM Standards.

GRINNELL WELDING FITTINGS ARE QUALITY-CONTROLLED FOR DEPENDABILITY

TRUE CIRCULAR SECTION

True circular section at all points makes a Grinnell fitting easy to align and weld . . . there is no distortion or no flattening to affect flow adversely.



FULL EFFECTIVE RADIUS

The loss of pressure through Grinnell welding elbows is held down to an absolute minimum . . . because of the full and the effective sweep of the radius.

SMOOTH, CLEAN INSIDE SURFACE

Grinnell Fittings have uniformly smooth inner walls . . . no waves or ridges to cause turbulence or accelerate erosion or corrosion. No pockets to trap solids.

EASY, SWEEPING TURNS

In Grinnell welding tees, corners where outlet joins the run are well-rounded and perfectly smooth to minimize resistance to flow and to prevent trapping.

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
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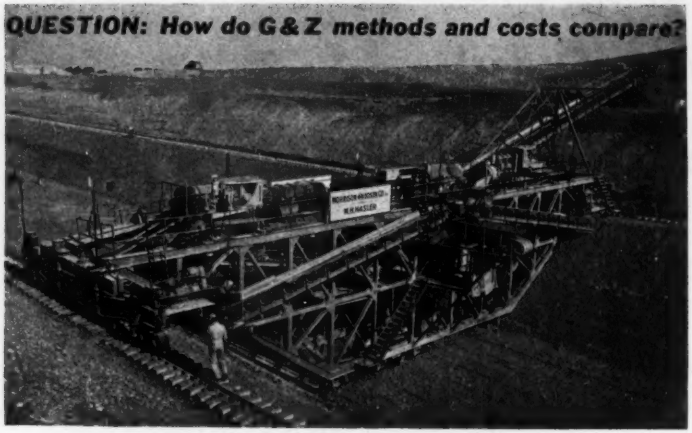

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THE RECORD SHOWS:

Guntert and Zimmerman's canal trimming and lining equipment has made canals economically possible in the U.S.A.---and---practical for your use.

There is no known concrete lining method of large scale canals that approaches the low cost obtained by Guntert and Zimmerman's methods.

With our equipment, correlated with standard contractor's equipment and able supervision: you may expect, at lower costs to you, the quality and production experienced in the U.S.A.

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BUILDERS
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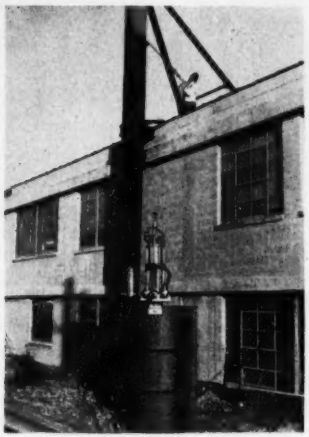
WATER and SEWAGE WORKS EQUIPMENT . . .

— for metering and controlling flow of liquids, air, dry materials. For Bulletins and complete information, address Builders-Providence, Inc. (Division of Builders Iron Foundry), Providence 1, Rhode Island.

BUILDERS–PROVIDENCE

is all in one piece and can be raised or lowered as a unit. The Adnun Liquid Level consists of reading glasses mounted vertically on the cutter bar supports. Since these glasses are directly connected to one another, any movement of the cutter bar immediately affects the bubble, assuring constant visual control of the cutter bar. THE FOOTE CO., INC., NUNDA, NEW YORK.



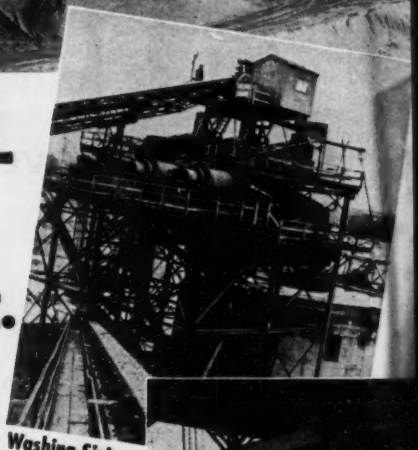
Air-Motor pumps can lift heavy or light materials

Eleven standard models make up the complete line of Air-Motor operated pumps and accessories recently announced by Lincoln Engineering Co. They're for use in automatic application of heavy to light materials such as sealers, adhesives, roofing, waterproofing, insulating and caulking compounds and can deliver such materials direct from their delivery drums. In the photo shown above, one of the Lincoln air-motor operated pumps with a 6 to 1 ratio delivered Insulmastic No. 4010 Vaporseal insulating and sealing material to the corrugated metal roof of an industrial plant. Delivery was made from the original 400-lb container through 100 ft of hose into the pole-spray gun at constant, uniform pressure. The same pumping unit and outlet accessories were used to apply Koppers Hi-Heat gray rust preventative material to several smokestacks. Plant engineers reported far more uniform coverage, controlled depth and completion in half the time heretofore needed. LINCOLN ENGINEERING CO., 5702-20 NATURAL BRIDGE AVENUE, ST. LOUIS 20, MISSOURI.

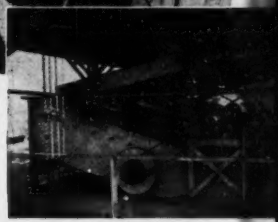
("New Products" continued on p. 98)

Scalping-Crushing

COLONIAL Sand and Stone Co., Inc. *uses* TELSMITH®



Washing-Sizing



TELSMITH Equipment in this Plant

Two 5' x 14' Two-Deck Heavy-Duty Scalping Screens

Two 48-S Gyrasphere Crushers

Eight 4' x 10' One-Deck Vibro-King Dry Screens

Four 4' x 14' Two-Deck Vibro-King Wet Screens

Four 60" x 9' Super Scrubbers

Eight 4' x 10' One-Deck Vibro-King Wet Screens

Two 4' x 12' Two-Deck Pulsator Rinsing Screens

Fourteen Field and Plant Conveyors—18", 24", 36", 42" wide; total length about 3000'

Nineteen 24" x 15' Special Tunnel Gates

● **COLONIAL of NEW YORK CITY and LONG ISLAND own and operate this modern all-steel sand and gravel plant. Designed in close co-operation with Telsmith engineers, plant layout and machinery is of the latest type, properly co-ordinated and balanced for flexibility and capacity, with interlocking features to assure smooth, trouble-free operation.**

Production averages about 1000-1200 tons per hr., making four kinds of material: minus 1½" plus ¼" crushed and uncrushed gravel mixed, minus ¼" plus ⅛" grits, minus ⅛" sand, all washed; and minus ⅛" dry sand. Most of the material is loaded into barges for shipment to New York. A truck-loading plant handles local demands.

In Scalping-Crushing Unit, two 2-deck Pulsators are in closed circuit with two 48" Gyrasphere Crushers which reduce all gravel to minus 1½". In the Dry Screening Plant eight special Vibro-King Dry Screens produce the dry sand. Scrubbing-Washing-Sizing Unit has two batteries of Vibro-King Wet Screens—two-deckers ahead, with single-deckers following the Super Scrubbers. Get Bulletin 266 describing Telsmith Complete Plant Service.

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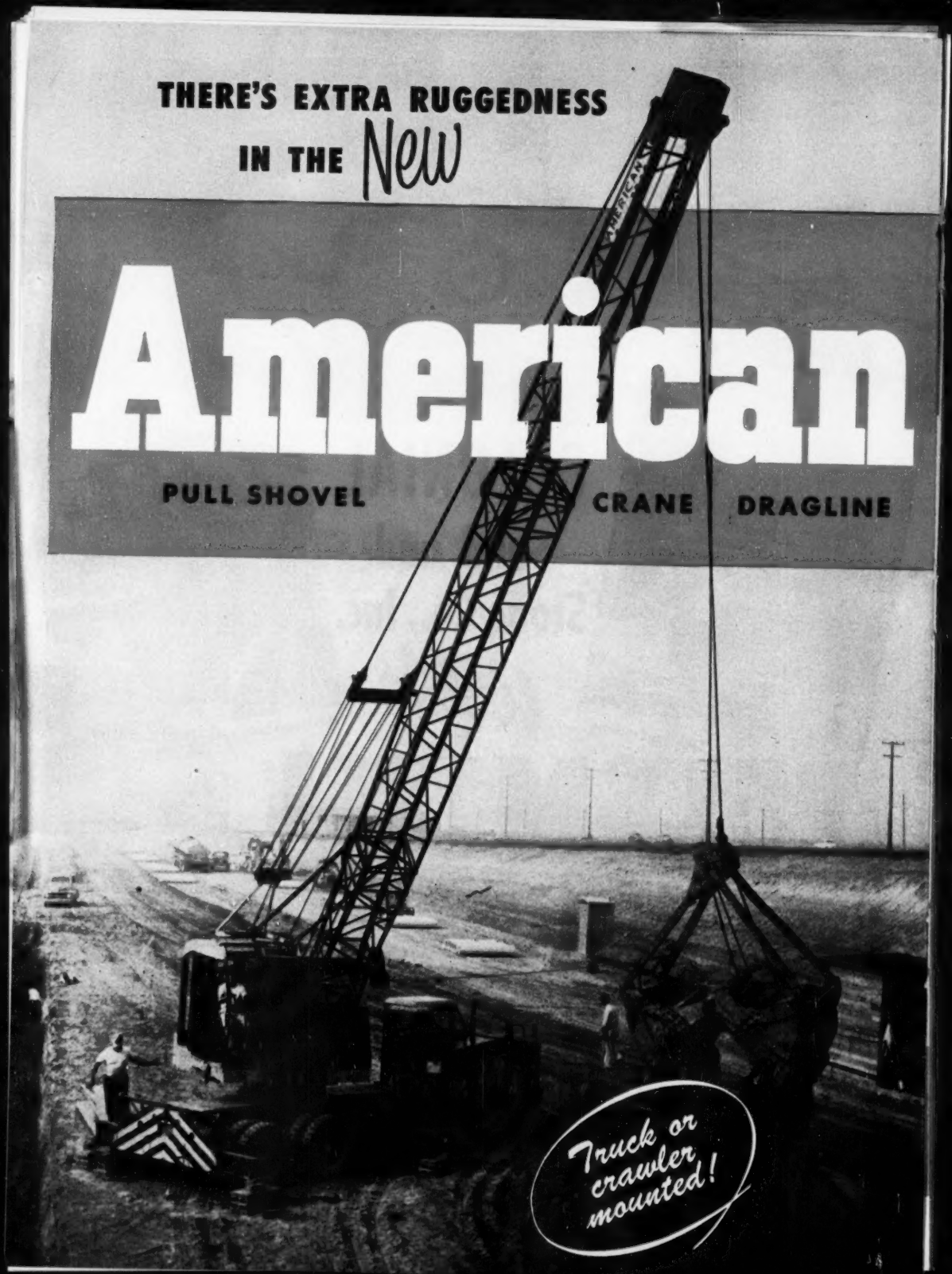
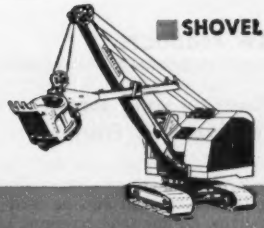
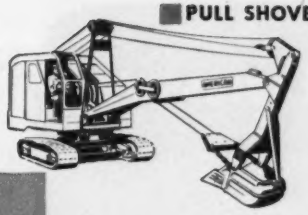
Rish Equipment Co. Charleston 22, S.C. & Clarksburg, W. Va. — Rish Equipment Co. Roanoke 7, & Richmond 10, Va. — Interstate Eqpt. Co. Statesville N.C.

G-18-2

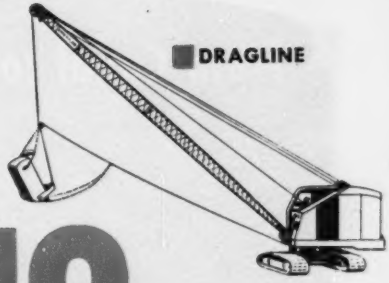

THERE'S EXTRA RUGGEDNESS
IN THE New
American
PULL SHOVEL
CRANE
DRAGLINE
Truck or crawler mounted!



SHOVEL



PULL SHOVEL



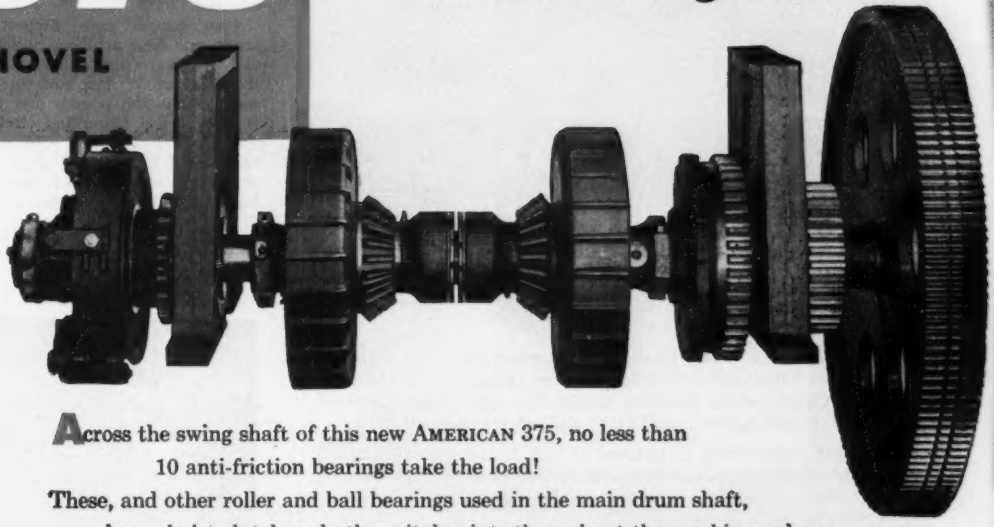
DRAGLINE

375

SHOVEL

10

anti-friction bearings on the swing shaft!



Across the swing shaft of this new AMERICAN 375, no less than 10 anti-friction bearings take the load!

These, and other roller and ball bearings used in the main drum shaft, boom hoist clutch and other vital points throughout the machine—plus anti-friction bearings in the brake linkage—give you the smoothest, easiest operating machine in the field today.

Before you buy any crawler or truck mounted machine, look at the new AMERICAN 375. Mail the coupon below for full details.

Built by

American Hoist & Derrick Company

ST. PAUL 1, MINNESOTA

MAIL THIS COUPON

CLIPPED FROM ENGINEERING NEWS-RECORD August 14, 1952

American Hoist & Derrick Co.
St. Paul 1, Minnesota

Please send more information on the new AMERICAN 375.

☐ CRANE ☐ SHOVEL ☐ DRAGLINE ☐ PULL SHOVEL
☐ TRUCK CRANE

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from Canal to Expressway

. . . with a 750,000 YARD FILL

The same undiminished closing power that has made Owen Buckets the number one choice for difficult "digging" is incorporated in rehandling buckets with larger, wider opening shells that take tremendous grabs in sand, gravel, refill earth and other loose materials.

Expert engineering utilization of this Owen principle of power application, based on unprecedented specialized experience, has made Owen the first and best known name wherever grab buckets are used.

Outstanding performance was doubtless a factor in selecting Owen buckets for this tremendous filling operation being handled at New Orleans by Jahncke Service, Inc. They'll do a job for you, too. Get the Owen Catalog.

NEW PRODUCTS

Vibrating sand screen introduced by Fairmont

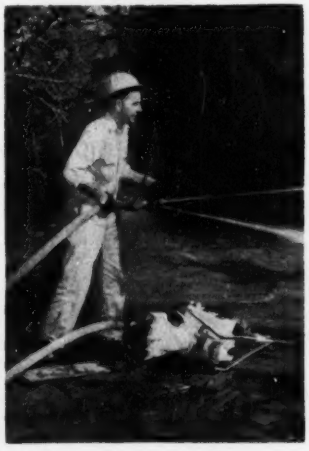
Primarily intended for use with grouting outfits, the Fairmont vibrating sand screen can also be used to advantage on any sand screening job. It is readily portable and completely self contained.

The vibrating element is attached to the upper end of the screen frame and consists of an integral eccentric shaft turning on two taper roller bearings and enclosed in a housing. A single-cylinder, air cooled engine, governed at 3000 rpm, drives the vibrating element through a flexible shaft.

Safety and long life are assured, since the vibrator and drive are totally enclosed.

Four hanger arms support the screen and have a rubber bushing at each end to give ample freedom to the screen assembly. The complete unit weighs only 380 pounds and has a structural steel frame and steel side sheets and sand hopper. A lift handle is located at each corner, and an opening at the lower end of the screen frame permits the rejected material to fall to the ground.

Specify Fairmont symbol 58520. FAIRMONT RAILWAY MOTORS, INC., FAIRMONT, MINNESOTA.



Power saw becomes pump

Foresters can now turn a power saw into a portable fire pump in 90 seconds. With attachments developed by men of Weyerhaeuser Timber Co., standard auxiliary fire-engine pumps may be coupled to various type power-

(*Continued on page 101*)

McKIERNAN-TERRY PILE HAMMERS

help keep Florida bridge project ahead of schedule

The Diamond Construction Co. of Washington, D. C., contractor for the new Gilmore St. Bridge over the St. Johns River at Jacksonville, Fla., had to sink pre-assembled frames and then drive piling to form cofferdams for pier foundations in 63 feet of water. Powerful McKiernan-Terry equipment helped keep this job ahead of schedule.

All H-beam bearing piles in this structure were driven with a McKiernan-Terry Double-Acting 11-B-3 steam hammer. For driving the steel sheet piling the contractor switched to a McKiernan-Terry Double-Acting 10-B-3 hammer, then used a McKiernan-Terry Double-Acting E-4 Extractor to pull the sheet piling.

This teamwork is typical of the way McKiernan-Terry equipment has helped to speed many thousands of construction jobs. There are 16 sizes of McKiernan-Terry hammers and 2 sizes of McKiernan-Terry extractors for every specific need. Write for bulletin describing complete line.

A McKiernan-Terry Pile Hammer punches down piling to form cofferdams for new Florida bridge, which will be another link in U. S. Highway 1. The bridge is located at Gilmore St. over the St. Johns River at Jacksonville, Fla. The designers are Reynolds, Smith and Hills of Jacksonville, Fla. C. L. Lash is Resident Engineer. B. E. Crumrine is Job Supt. for Diamond Construction Co.

OTHER McKIERNAN-TERRY PRODUCTS

MEAD-MORRISON COAL AND ORE UNLOADERS AND BRIDGES

Available in a variety of designs and in capacities of 300 to 1500 tons per hour. Exceptional durability proven by installations in service for half a century. Simple controls afford convenient, comfortable and speedy operation.

GRAB BUCKETS

Range of types and sizes take bulk materials loads up to 25 tons. Ruggedness without excess weight.

HONING UP TO 42-IN. I.D. X 55-FT. LONG

Typical of the extensive facilities of McKiernan-Terry for unusual jobs.

McKIERNAN TERRY

McKIERNAN-TERRY CORPORATION • MANUFACTURING ENGINEERS • 13 PARK ROW, NEW YORK 38, N. Y.

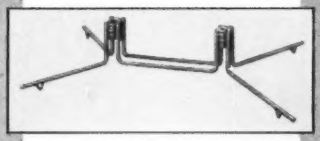
Plants: Harrison, N. J. and Dover, N. J.

MK 324

3 NEW SUPERIOR ACCESSORIES

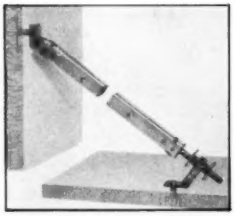
for more efficient handling of...

"TILT-UP" SLABS



"PICK-UP" INSERT with two 1" coil bolts, will safely lift a load of 11,000 lbs. when embedded in 3,000 lb. concrete slabs.

"ANCHOR" INSERT in both the "Tilt-Up" slab and the floor slab provides anchorage for slab brace bolts.



SLAB BRACE for temporary anchorage is quickly installed and adjusted. Has exclusive pivoting action.

Are you bidding on a "Tilt-Up Slab" job? Are you starting a "Tilt-Up Slab" Job? Then you will be interested in Superior's three new accessories, designed for faster and more efficient handling of precast panels.

The Superior *"Pick-Up" Insert* provides dependable anchorage for bolts to which slings are attached when the panel is raised. *"Anchor" Inserts* in both the "Tilt-Up" slab and the floor slab secure the temporary bolts to which the braces are attached. With Superior's adjustable and pivoting *Brace* you have an efficient as well as inexpensive answer to both ordinary and unusual bracing problems . . . you merely assemble with 2 x 4's of lengths to fit individual jobs.

Leading contractors on the Pacific Coast and in the Midwest already are users of these new specially designed inserts and braces.

For details write today for Superior's Bulletin "T U-1".

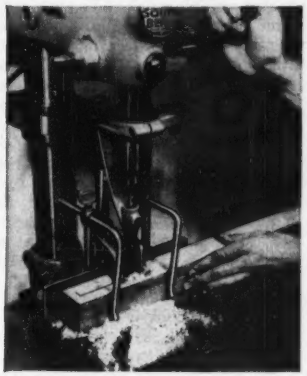
SUPERIOR CONCRETE ACCESSORIES, INC.

4110 Wrightwood Avenue, Chicago 39, Illinois

New York Office
1775 Broadway, New York 19, N. Y.

Pacific Coast Plant
2100 Williams St., San Leandro, Calif.

saw motors. It requires only a minute and a half to disconnect the saw and put the pump attachment in its place. As demonstrated here by Cecil Cunningham of Weyerhaeuser's Springfield, Oregon branch, when coupled to a 7 hp saw motor, a siamese nozzle will spray a fire with two streams of water through ⅞-in. openings at 100 lb pressure. Additional hose may be added to either nozzle to carry separate streams. This 7 hp motor and pump weigh only 97 lb, and may be transported readily. Whenever necessary, such saw motors and pumps may be fastened to mortarboards and carried into areas not accessible to heavier and bulkier equipment. WEYERHAEUSER TIMBER CO., SPRINGFIELD, OREGON.



Mortising attachment fits drill press work table

This new mortising attachment is a real time and work saver for making square end mortises quickly and accurately. It consists of a fence assembly which bolts to the drill press work table, a mortising chisel holder which clamps to the drill press quill and three sizes of mortising chisels and bits; ¼-in., ⅜-in., and ½-in. Two especially new features are incorporated in the attachment. The two guide arms, which attach to the fence, adjust separately to handle irregular pieces. There is an additional 1-in. independent adjustment on the base. These give the attachment more capacity; up to 5½ in. under the forked hold-down and as much as 4⅞ in. between the guide arms and fence. It fits all South Bend drill presses as is and can be adapted to most all other makes having 1¾ in. quill and using a ½-in. chuck. SOUTH BEND LATHE WORKS, SOUTH BEND 22, INDIANA.

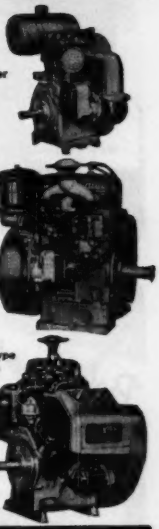
WISCONSIN-Powered Joint Cleaner Helps Prepare WRINKLE-FREE Runways

POWER TO FIT THE MACHINE — POWER TO FIT THE JOB

Powered by a 13 hp. Model TF 2-cylinder Wisconsin Heavy-Duty Air-Cooled Engine, this Model "G" Tennant joint cleaner, manufactured by the G. H. Tennant Co., Minneapolis, Minn., prepares airport pavement joints for re-sealing. The machine routs out shrunken old seal, pebbles and dirt, refacing side-walls at the same time.

Helping to prepare smooth, "wrinkle-free" runways is another typical power service application in which Wisconsin Air-Cooled Engines fit both the machine and the job.

You can't do better than to specify "Wisconsin" for any purpose that requires dependable engine power within a 3 to 30 hp. range.



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World's Largest Builders of Heavy-Duty Air-Cooled Engines
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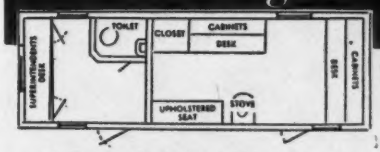
Custom Designed FIELD OFFICE TRAILERS



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Langenfelder & Son, Inc.
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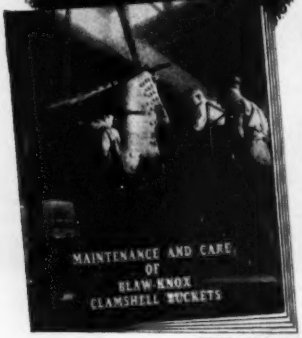

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including complete details about . . .

HOW TO SAVE YOUR BUCKET

Among the many "bucket saver" suggestions are a list of "do's" and "don'ts" on the use and abuse of clamshell buckets; tips on how to prolong cable life; common operating mistakes that make bucket lips bow in or bend out.

HOW TO GET THE MOST FROM YOUR BUCKET

"How to Reeve the Bucket for Maximum Efficiency" is illustrated and described in detail. One page is devoted to instructions for operators.

HOW TO REPAIR BUCKETS

Methods of renewing the cutting edges of worn bucket lips include special welding precautions. This section contains instructions for removing and replacing ball bearings in lever arm sheaves, lubrication instructions, and many other practical hints for care and maintenance of clamshell buckets.

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Like all Acker Drills, this lightweight husky was designed and built to operate under the most rugged conditions.
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The NEW ACKER TEREDO DRILL

ACKER DRILL CO., INC.
SCRANTON 3, PA.

PUBLICATIONS

Check Valves—A 2-p bulletin (WS-1) describes this company's hydraulic double-cushioned check valves with two detailed drawings showing the complete list of parts. Application, construction, sizes and pressures are explained along with tables showing general dimensions.—GOLDEN-ANDERSON VALVE SPECIALTY CO., 2094 KEENAN BLDG., PITTSBURGH 22, PA.

New Type Bushing—Dimensions and engineering information on wide-range, stationary-control Vari-Pitch sheaves equipped with a new type Magic-Grip bushing for use with Q or R section belts are contained in a 4-p leaflet (20S7811) just released by this company. New bushing makes possible quick and easy installation or removal of the sheave and permits mounting it on the shaft so that the adjusting control mechanism is either toward the motor bearing or away from it. In addition, the sheave with bushing is about 20% lighter than the former style wide-range Vari-Pitch stationary-control sheave. Factors governing proper selection of a wide-range Texrope drive using the Vari-Pitch stationary-control sheave are fully explained.—ALLIS-CHALMERS MFG. CO., 840 S. 70TH ST., MILWAUKEE, WIS.

Earthmoving Book—The complete line of rubber-tired hauling trailers of Athey Products Corp. is described in a new 4-p, two-color, comic book type booklet. Describing the PD-20, PD-10Q, and PD-10GP, the booklet has more than 15 illustrations and has as its theme two contractors discussing job application and products. —ATHEY PRODUCTS CORP., 5631 W. 69TH ST., CHICAGO 38, ILL.

Road Reclamation Method—A 24-p booklet titled "The Athey Method of Reclaiming Worn-Out Roads," gives a step-by-step procedure for reclaiming bituminous and gravel roads and streets, plus useful production data, rock hardness charts, cost estimates and actual job costs. Much of the factual information was obtained from actual projects across the nation. Contractors, state, county or city officials, or any person actually engaged in road building, can obtain a copy of this booklet by writing ATHEY PRODUCTS CORP., 5631 W. 69TH ST., CHICAGO 38, ILL.

Tractor Care—Maintenance practices are simplified for operators of Cat DW21, DW20 and DW10 tractors

in a 24-p multi-colored cartoon-type booklet which will be published in English, French, Spanish and Portuguese. Using scenes familiar to the operator, the booklet discusses factory-prescribed techniques in caring for Caterpillar wheel-type tractors, thereby reducing repair bills and eliminating down-time. — CATERPILLAR TRACTOR CO., PEORIA 8, ILL.

How to have comfort from moving air —More than 150 types of air-moving equipment which contribute to personal comfort are described in an attractive 200-page manual containing photographs and specifications. Brief discussions on specific air-moving classifications are followed by data on products of TORRINGTON MFG. CO., 70 FRANKLIN ST., TORRINGTON, CONN.

Centrifugal pumps—A two-page specification folder describes the new Model P-104 all-purpose centrifugal pump recently designed by Kenco, Inc. It features a completely submersible pump, hermetically sealed, that will handle a wide variety of liquids and is suited for many coolant applications in industrial plants. Specifications and dimensions, pump capacity and design features are listed in the folder obtainable from KENCO, INC., 1125 N. RIDGE ROAD, LORAIN, O.

Brazing manual — Particularly welcomed by the service trades, this new type manual is entirely operator written in the unedited language of the man behind the torch. Containing data for brazing shapes, sheet, castings, tubing and assemblies of copper, brass, steel, aluminum and cast iron, the 16-pager is fully illustrated. ALL-STATE WELDING ALLOYS CO., INC., WHITE PLAINS, N. Y.

Pipeline Trenchliner—Model 215 trenching machine for mile-a-day cross-country trench production, is described in a new 4-p bulletin. This new wheel-type unit digs in a range of 30 digging feeds, from 6.2 in. to 18½ ft per min, 13 to 31 in. wide and up to 6 ft deep. Trenchliner is equipped with standard tractor crawlers and self-cleaning lug-type shoes. Treads are 18 in. wide and equipped with replaceable links, pins and sealed bearing-mounted crawler rollers. An extremely low ground-bearing pressure of only 6 psi is exerted by the machine, according to the manufacturer. Actual field photographs demonstrate other Model 215 features: friction clutch control of digging wheel; self-sharp-

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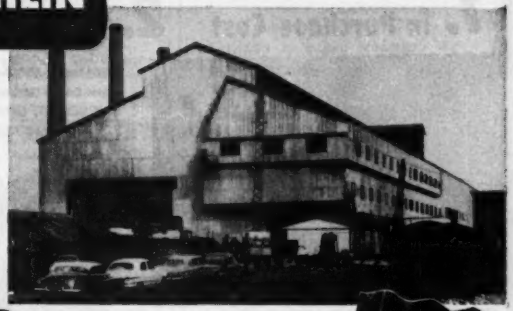
PLASTEEL—Chosen for part of New Otis Works' buildings which house J&L'S new open hearth furnaces and will help increase production in Cleveland by 200,000 net tons annually.



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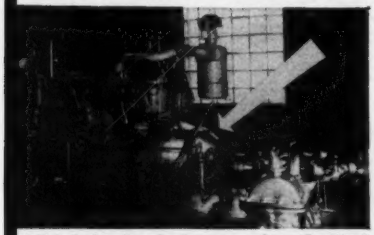
with S-N REDUCTION GEARS

1. in Purchase Cost **2. in Operating Cost**



S-N Reduction Gear is shown on a Caterpillar Diesel (78 H.P. at 1600 r.p.m.) in this municipal pumping station.

World-famous SNOW-NABSTEDT Gears and Power Cut-Off Clutches transmit full power to load SMOOTHLY, QUIETLY, EFFICIENTLY, at the most ECONOMICAL speed for the driven equipment.

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PUBLICATIONS

ening "tap-in" digging teeth; shiftable and reversible spoil conveyor for discharging material on either side of the machine; all main gears enclosed and running in oil; shaft openings dirt sealed; choice of two standard make 55-hp diesel engines.—PARSONS CO., NEWTON, IOWA.

Portable Cutting Tools—New 4-p catalog describes cutters from economical, lightweight hand type to larger, high-capacity bolt models. Included are hand-operated units for cutting steel rod, wire, fence, steel strapping, high-tension wire, and a wide variety of other materials. Photographs and complete specifications accompany each model.—THE MANCO MFG. CO., BRADLEY, ILL.

105-cfm Compressors—A new 4-p bulletin describing all types of these units is now available, together with listings and illustrations of gasoline, diesel and electric-powered trailers and "Auto-Air" truck-mounted units and industrial stationary machines. Complete mechanical specifications are included in Form E-237.—DAVEY COMPRESSOR CO., KENT, OHIO.

Non-cancellable sickness and accident insurance—NON-CAN is the abbreviated title of a non-cancellable type of insurance which should be of interest to all. Once it's in effect it cannot be cancelled by the company for any reason. Payments are made for disability, for instance, which prevents you from "working at your usual job" where others pay only if the disability prevents you from working "at any job or occupation". These and other benefits are spelled out in a pocket-sized booklet #70-51, available from UNION MUTUAL LIFE INSURANCE CO., BOX 548, PORTLAND, MAINE.

Question-answer book on Penta—Detailed answers to questions frequently asked about pentachlorophenol, a new chemical used to protect wood against decay and insect attack, are included in a 40-page booklet. There are 51 questions and answers, and samples of treated woods range from ties and poles to control of dimensional stability of finished panelling and millwork. —MONSANTO CHEMICAL CO., ST. LOUIS 4, MISSOURI.

Foamglas—A new 4-p folder discusses the use of this glass in sandwich panel construction, for textile, food production, electric power, chemical processing buildings and housing.—PITTSBURGH CORNING CORP., 307 FOURTH AVE., PITTSBURGH 22, PA.

SEARCHLIGHT SECTION

(Classified Advertising)

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Two year contract. Previous foreign experience preferred. Public works Program.

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POSITIONS VACANT

ACCOUNTANTS WITH construction experience. Foreign and Domestic jobs. State preference with resume. P-4950, Engineering News-Record.

ARCHITECTURAL SPECIFICATION writer, assistant, with knowledge of construction trades and building materials, for large Detroit office. Experienced man preferred, but will train architectural or civil graduate with proven writing aptitude. Long term employment with nationally known architects and engineers. Salary $5000-$6500 to start depending upon experience and education. Send resume of above, with data available. P-4976, Engineering News-Record.

ARCHITECTURAL SPECIFICATION Writer, assistant. Experienced in commercial and industrial building construction specifications preferred, but will consider architectural or civil graduate with writing experience provided he can write clearly. Long-term employment and good salary, commensurate with ability. Send resume of education, experience, salary desired, date available. Harley, Ellington & Day, Inc., 153 E. Elizabeth St., Detroit 1, Mich.

BRIDGE DESIGNERS. Experienced and inexperienced men with a civil engineering degree wanted for a period of about 24 months in the office of a well known organization in Central Pennsylvania. State qualifications, age, salary requirements and availability in first letter. P-4655, Engineering News-Record.

DESIGNERS—DRAFTSMEN, for highways and bridges. Excellent opportunities. Be prepared to submit complete experience record. Ammann & Whitney, Consulting Engineers, 76 Ninth Ave., New York 11, N. Y.

DRAFTSMEN, STRUCTURAL steel and ornamental iron detailers and checkers, also estimators. Air-conditioned office. Health insurance. Free parking. Vacation and holidays with pay. Top pay. Permanent position. P-4923, Engineering News-Record.

ENGINEERS EXPERIENCED in fields related to design and construction of limited access highways wanted for major mid-western project. In reply give detailed summary of experience, salary and when available. P-4848, Engineering News-Record.

ENGINEER, CIVIL or Mechanical, experienced for field or office work. Write P.O. Box 126, Wilmington, Del.

REINFORCING BAR Detailer with two years minimum experience. Must be fast and accurate. Five day, 40 hour week. State qualifications, age, salary desired and availability first letter. P-4948, Engineering News-Record.

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Experienced in Batch plant and Site control of Concrete Plant control and Site inspection of Asphalt paving; Compaction control of Earth fill, Soil boring and Core drill inspectors. Engineering Geologists, Concrete Technologists, Asphalt Paving Technologists and Construction Engineer, Graduate engineers P.E. registration preferred, also materials laboratory technicians and chemists. Project in Midwest, South and East.

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Engineers structural, mechanical, and electrical for work on hydro-electric power developments. Write giving full experience record and qualifications.

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GRADUATE ENGINEERS for responsible positions in consultant's office in Ohio. Structural engineer experienced in concrete design. Sanitary engineer experienced in design and operation of water and sewerage systems. Permanent positions intended. Salary open. Duties include supervision of detailers and draftsmen. Only engineers with proven ability need apply. P-5010, Engineering News-Record.

PRODUCTION OR industrial Engineer for Large concrete products manufacturing concern operating a large number of plants, manufacturing sewer, pressure and concrete pipe and other products in the Eastern half of the United States. Applicant should be graduate Civil Engineer with field construction experience, ability to handle men and manage small production plant or field project. Excellent proposition with a bright future. Write P-4851, Engineering News-Record.

QUANTITY SURVEYOR experienced in general building construction for general contractor's office located in central Pennsylvania. College graduate in Architectural or Civil Engineering preferred but not necessary. In reply, give experience, references, and salary desired. P-5006, Engineering News-Record.

WANTED: CIVIL Engineer, experienced in design of site improvements including roads, surface drainage and structures for small office Eastern Seaboard. Must be experienced and possess neat drafting ability. In reply give full outline of education and experience, when available and salary expected. P-5032, Engineering News-Record.

WANTED—FIELD Purchasing Agent and Office Manager—Experienced in industrial construction. Permanent position in organization of well established General Contractor, operating in the Southeast. Furnish complete information regarding qualifications, experience, salary requirements availability. P-4975, Engineering News-Record.

WANTED—RECENT CE graduate for Engineering Field Service Low Cost Road Construction Highway experience desirable. Small Southeastern territory. Good opportunity National Organization. P-4903, Engineering News-Record.

WANTED: INSTRUCTOR of engineering drawing and descriptive geometry. Salary $4,000 for 9 months. Assistant professorship for qualified applicant. M.E. graduate preferred. Dept. of Eng. Drwg., University of North Dakota, Grand Forks, N. Dak.

SELLING OPPORTUNITIES OFFERED

ESTABLISHED MANUFACTURERS' Sales Representatives wanted by reputable manufacturer whose patented product is used in construction of sewerage disposal plants, waterworks, pumping stations, industrial plants, etc. RW-4850, Engineering News-Record.

(Continued on page 106)

CONCRETE AND SOILS ENGINEER

Civil Engineer; graduate; 30-45; to conduct field and laboratory investigations as necessary for foundations for refinery equipment, large tanks, and buildings. Must be qualified to plan the work and give comprehensive recommendations. Duties will also include variety of concrete and other materials problems. Write:

EMPLOYEE RELATIONS DEPARTMENT
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

EARTHMOVING MEN

Major earthmoving equipment manufacturer has responsible positions open for field representatives to serve in continental United States. Knowledge of time study . . . equipment performance . . . earthmoving techniques essential. Civil engineer graduate preferred. Send full particulars of experience and education to

P-5035, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SALES ENGINEER WANTED

Not over 35. Graduate of Technical school and five years' practical experience. To take charge of the Light Steel Structural Division of an old established and successful company in the sheet steel fabrication business. Office location Pittsburgh district. Distribution in the entire U. S. Good chance for advancement for man with imagination and ability. State education, employment history, experience and salary requirements. All replies confidential.

P-5046, Engineering News-Record
330 W. 42 St. New York 36, N. Y.

POSITION AVAILABLE
CIVIL ENGINEER

The City of Zion, Illinois, has an excellent opportunity for a graduate civil engineer to supervise public works and water department.

Address application to
Mayor Lee R. Fleming Zion, Ill.

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OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-first year. Write today.

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All instruction by mail. Send today for sample lesson and complete details
GEO. E. DEATHERAGE & SON
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SELLING OPPORTUNITIES OFFERED
(Continued from page 105)

MANUFACTURERS REPRESENTATIVE wanted in the Chicago territory to handle precast light-weight nailable and insulating roof, floor and wall slabs on a commission basis. We usually take the contract also for erecting the slabs. Porete Mfg. Company, North Arlington, N. J.

POSITIONS WANTED

BRIDGE SUPERINTENDENT—Age 40—22 years experience. Prefer jobs ranging 50,000-100,000. Salary commission basis. PW-5019, Engineering News-Record.

CIVIL ENGINEER 36, graduate, registered, married; 5 yrs. field, heavy construction; 9 yrs. design, commercial & industrial bldgs. refinery structures and piping stress analysis. Desires to relocate Southwest or West. PW-5020, Engineering News-Record.

CIVIL ENGINEER: Recently returned from Asia available for appointment. Supervising or contractor's engineer. Background experience of forty years engineer-construction field and office, including responsible foreign assignments on airports, drainage, highways, construction planning and municipal projects. Excellent credentials. Fluent Spanish. Reg. P.E. N.Y. PW-4809, Engineering News-Record.

CIVIL ENGINEER, Reg. P.E. Desires new position. 20 years supervisory, design, construction and administrative experience in highway, municipal and industrial projects. PW-4804, Engineering News-Record.

COST ENGINEER, 25, 3 years experience private utilities, 1 year A.E.C., desires position with private industrial contractor. PW-4965, Engineering News-Record.

ENGINEER FOR Structural Steel Fabricator. Am interested in contracting progressive firm in need of Chief or Ass't Chief Engr. Extensive experience in sales estimating, design and drafting, including supervisory duties. Am presently employed. Excellent references. PW-4963, Engineering News-Record.

GEN. SUPT.—Construction—45, 26 years experience heavy construction — industrial — dams — roads — bridges — airports — disposal plants — tunnels — water & sewage systems — have following of experienced men. PW-4924, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT and engineer, all types buildings and heavy work, industrial, commercial and architectural, chemical and refinery plants, bridges, clean record, knows costs and capable organizer, completing large concrete job, available soon. PW-4773, Engineering News-Record.

GENERAL CONTRACTORS Right-Hand Man —Quantity survey, pricing, subcontracts, purchasing job scheduling, Change Orders. Graduate Engineer 12 yrs. of experience. Lawrence Z. Stotts, 1280 Kastle Road, Lexington, Kentucky.

GRADUATE, REGISTERED, Civil Engineer; 10 years varied experience; field and office. Four years in Latin American countries as water works engineer. Two years experience in design and construction of jet airfields. Desire permanent position with opportunity for advancement. Available by middle of September. PW-5049, Engineering News-Record.

PROJECT MANAGER—Professional Engineer, 15 yrs design, construction & administration. Hydro & steam electric power stations, heavy industrial. Present concern has been advised. PW-5039-Engineering News-Record.

SANITARY ENGINEER. Five years professional experience. Industrial (boiler feed) and Municipal Water Treatment. Industrial and Municipal Waste Disposal. PW-5042, Engineering News-Record.

SELLING OPPORTUNITY WANTED

REPUTABLE AND reliable Engineering Service Company wishes to add to its services by sales and distribution of products, equipment, etc., related to concrete, construction, or the contracting field in general. Company has wide experience and acquaintanceship in the construction and contracting field and sales ability to put over any product of merit that is handled. Please write RA-5021, Engineering News-Record.

BUSINESS OPPORTUNITY

Registered Structural Engineer, office in Chicago, wishes partner with contacts to widen scope. 1951 gross fees over $100,000.00 BO-4848. Engineering News-Record.

FOR SALE

69% interest in structural steel fabricating and miscellaneous iron work company, billing over $300,000 annually.

25,500 sq. ft., plant located in Oakland, Calif., on 86,000 sq. ft., plot fronting on San Francisco Bay. Spur track, installed way for launching barges, etc., 4 travelling cranes, good machines and tools.

Good stock of steel and contract for 6 months work on hand.

BO-5023, Engineering News-Record
68 Post St., San Francisco 4, Calif.

WANTED

WANTED
NEW CRAWLER TRACTORS
D8 - D7 - D6 - D4HT4 - D4 - D2 - TD24 - TD18A - TD14A - TD9 - TD6 - HD20 - HD15 - HD9 - HD5G
Cash Waiting
EVANS and EDELL
159 West 22 St. NEW YORK 11, N. Y.
Algonquin 5-3800

WANTED TO RENT OR BUY
LIGHT GAS LOCOMOTIVE CRANE
With 35' or 40' Boom and 5 to 10 Ton Lifting Capacity.
JONES CONTRACTING CO.
22750 Woodward Ave. Detroit 20, Mich.

WANTED
NEW POWER SHOVELS
DIESEL POWERED
22B - 38B - 54B
Cash Waiting
EVANS and EDELL
159 WEST 22 ST. NEW YORK 11, N. Y.
ALGONQUIN 5-3800

WANTED
1½ Yard to 2½ Yard Crane or Shovel
First class condition only. Also boom, lagging, gantry, and drag line buckets for 1¼ yard and 2 yard drag line cranes. Also small trenching machine.
Write P. O. Box 1106, Roanoke, Va.

ARMY SURPLUS
New-Used and Takeoff **TRUCK TIRES**
Suitable for construction equipment and extra rough service.
750/20 8 ply unused mud & snow tires & tubes. $30.00.
900/20 14 Ply or better takeoffs. $55.00.
825/15 12-14 Ply takeoffs. $50.00.
1100/20 12-14 Ply mud & snow takeoffs. $60.00.
1400/24 20 Ply mud & snow takeoffs. $99.00.
1400/24 16 Ply Goodyear diamond tread. $85.00. Takeoffs almost new.
Every tire in perfect condition. No repairs or vulcanization.
We can supply tires & tubes for all types of grader, construction, and heavy duty equipment.
Inquiries promptly answered. Tires shipped anywhere. 25% with order. FOB Everett, Mass.
TIRE SALES & SERVICE CO.
71 Main St. Everett 49, Mass.
Tel. EV 9-9485

FOR SALE
1—702 Koehring, 1¾ Yd. Shovel, Dragline, 80 Ft. boom, Murphy-Diesel. Excellent Condition, Phila., Pa.
10—1950 A-30-H Mack Dump Trucks. Like new. Used very little. Excellent for batching. Average mileage 15,000.
ACCHIONE CONTRACTING COMPANY
1607 McKean Street Phila. 45, Pa.
DE 4-5178

FOR SALE
Michigan ½ Yard Truck Crane with Owens Bucket. Nearly New.
Gradall with 12", 24", 36" Buckets; and 8' Grader Blade. Good Condition.
TINARI & McNAMARA
Southhampton, Pa. Churchville 1057

FOR SALE
2 Int. TD-18A W/Buc.-Erie Bullgrader
1 Int. TD-24 W/Buc.-Erie Bullgrader
1 Int. TD-18 W/Heil Bulldozer
2 Int. TD-18 W/Heil Trailbuilder
2 Cat. D-8 W/Cat Bulldozer
1 Int. ID-6 W/Superior Hyd. Loader
1 Buc-Erie B-170 Scrapers
3 LeTour. C-1 Tournapull Scrapers
4 LeTour. Super-C Tournapulls
2 LeTour C-11 Tournomatic Tournapulls
3 Euclid 25 FDT Bottor Dumps
1 Rex 34-E Paver-Double Drum
1 Jaeger-X- Diagonal Screed Finisher
1 General-420 Crawler Shovel-Diesel 1C.Y.
1 Lorain L80 Crawler Shovel-Diesel 1¼ C.Y.
All Equipment in good condition
Construction Equipment Exchange
120 Liberty St. New York 6, N. Y.
Phone—Cortlandt 7-4423

BOOMS - DERRICKS - TANKS
Crane booms for all makes of cranes—stiff leg derricks—elevated water tanks with hemispherical bottoms — flat-bottomed storage tanks. Prices competitive.
THE DEL-STRAT CORP.
Box 195 Delaware, Ohio Phone 23150

FOR SALE
1—Northwest Model 28 Dragline W-70 ft. Boom
1—Northwest Model 25 ¾ yd. Shovel Front
2—Cat. D 7 Cable Dozers
1—Cat. D 8 Cable Dozer
1—Cat. D 8 Hydraulic Dozer
1—Cat. D 6 Hydraulic Dozer
6—Int'l. K R 11 Dump Trucks
All Equipment in Excellent condition.
PIONEER CONSTRUCTION CO.
West End National Bank Bldg., Shamokin, Penna.

FOR RENT

RENT A
COMPRESSOR
(STATIONARY - PORTABLE)
FROM
Compressor Men

GAS • DIESEL
ELECTRIC • STEAM
20 lbs. to 3000 lbs.
30 CFM to 2500 CFM
Rental—Rental Purchase
—50 YEARS OF SERVICE—

American
AIR COMPRESSOR CORP.
DELL AVE. & 48th ST. NORTH BERGEN, N. J.

FOR SALE
Steel Frame Buildings
Dismantling an Entire Plant for Re-Erection

- Building 165 ft. x 500 ft.; one 75-foot foot bay, 40 ft. high clearance; two 45-ft. bays, 24 ft. high clearance. Craneway in each bay. Trusses 20 ft. on center.
- Building 60 ft. x 140 ft. Clear span. 20 ft. high clearance under trusses. Trusses 15'7½" on center.
- Various other steel frame buildings sizes from 20' x 25' to 42' x 140'.

Write, Wire or Phone (Collect)

Cuyahoga Wrecking Co.
12645 Greenfield • Detroit 27, Michigan
Phone VErmont 8-1055

For Rent
SPEEDCRANES
LATE MODELS

Manitowoc Diesel Powered Speedcranes for rent. 25, 40 and 80 ton capacities with booms 180' or more. 20' and 30' jibs. Special price on long rentals.

FORSYTHE EQUIPMENT CO., INC.
37-11 Vernon Blvd. Long Island City, New York
Tel. STillwell 4-1020

SALE — RENT
GUARANTEED LIKE NEW
1949 LORAIN 820 2 C.Y.
HI-FRONT SHOVEL, CRANE, DRAG
CHEMICAL CO.
145 W. 43 St., N.Y.C. MU 5-4826

FOR SALE
New
Byers ¾ cu. yd.
SHOVEL
and/or
50' Clam Boom
PRICED LOW FOR IMMEDIATE SALE

CAPITOL EQUIPMENT, INC.
Troy, N. Y.
Tel. ADams 8-3314

FOR RENT
MANITOWOC SPEEDCRANES

Model 3500 — crane or dragline — 80 ft. boom — manual swing — 20' or 30' jibs — 60 ton lifting capacity — or 2½ c.y. drag bucket.

Model 2000-B — crane or dragline — 60 ft. boom — manual controls — 20' jib — 25 ton lifting capacity — or 1½ c.y. drag bucket.

McCARRICK BROTHERS, INC.
1700 E. Ridge Pike P. O. Box 291
Norristown, Pa. *Phone 8-4231*

FOR RENT OR SALE
Equipment in 90% new condition

Osgood 816 #5903 (11-49) standard 1¾ yd. shovel. Cat D-13000, 33" pads, 13' crawlers.
Osgood 826 #5993 (4-51) equipped same as above.
(2) TD-24's with B-E DDPCU & angledozers.
(2) Cat D-8's 2U-10440—& 4031 Cat 25 & angledozers. (Both factory rebuilt)
All sizes backhoes, cranes, dozers etc.

National Construction Co.
23500 Lakeland Blvd. Cleveland 23, Ohio
Nite—R. SNYDER Wi-22821

FOR SALE
LORAIN 820
Shovel Attachment, 1948
Excellent condition,
Amsco 2 yard bucket, lagging, also spare parts

CENTRAL CONTRACTORS SERVICE, INC.
GEORGE A. CARLSON, Pres.
1150 N. North Branch St. Chicago 22, Ill.
Michigan 2-1555

FOR RENT
2—Manitowoc 3000B Cranes,
1 new and 1 in good condition. 100 foot of boom and 20 foot of jib for each.
1—Marion 1-½ yd. Crane,
Model 363 with shovel front, in very good condition.
DICK CONSTRUCTION COMPANY
LARGE, PENNA. ELIZABETH 391

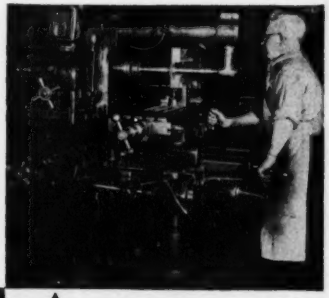
SPECIALS IN REBUILT BULLDOZERS
1—International TD-18 hydraulic.... $6500.00
1—International TD-14 hydraulic.... $5250.00
Tractor Parts for CAT. D-8 & D-7 under list prices

BENDIX MACHINERY CO., INC.
401 BROADWAY NEW YORK 13
Tel: Canal 6-5093

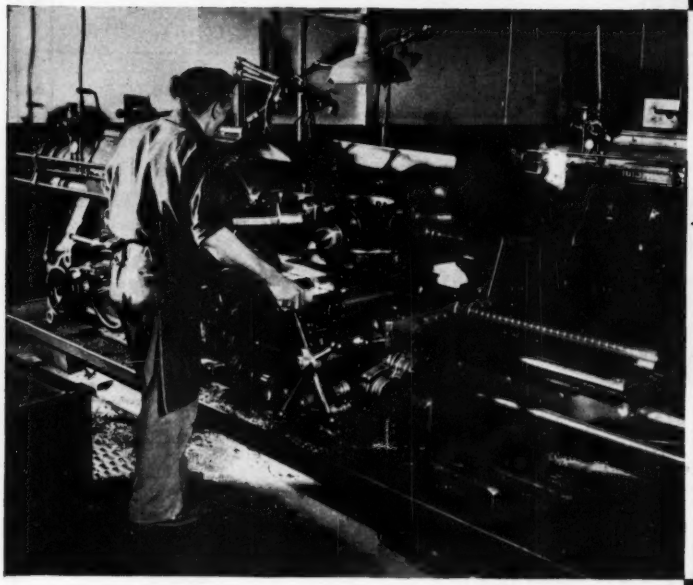
Buckeye Trencher, Model 12, cuts 2' x 5½', special conveyor, perfect condition. Machine located in New York City. **$5200.00**

FB-4958, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

He works with Doctor-like thoroughness

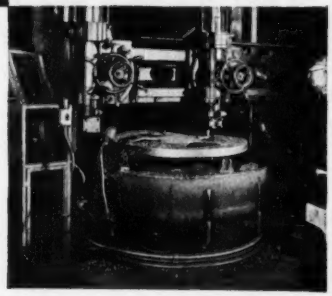


Milling operation on #3 Brown Sharpe milling machine.
Milling slot in Hoist control lever for American locomotive crane now being rebuilt for Babcock-Wilcox Tube Co., Barberton, Ohio.



Turret Lathe operation on #5A Gisholt turret lathe.
Turning—boring—facing and cutting to length, Bronze bushings for Lorain 920 turntable rollers. With parts in short supply as they are today, the ability to help ourselves is money in our customers' pockets.

Boring mill operation on 60 in. Niles vertical boring mill.
Turning and facing cylinder end casting for Robot laundry washer.



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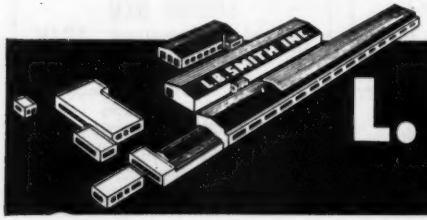
CONSTRUCTION EQUIPMENT

AN INVITATION

To Use the World's Largest Equipment Rebuilding Facilities

Where rebuilding is a business—with over 25 years of experience on all types of construction equipment—where highly trained mechanics with precision tools—can build back into your equipment many years of additional and efficient usefulness—using the same thoroughness employed in rebuilding our own used equipment.

You are invited to investigate our complete facilities.



L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 1 No. 5

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Schramm 105 cubic foot gas powered compressor on 4 steel wheels.
Pennsylvania 12" x 10" class 3A single cylinder, 355 cubic foot P.D., flat belt driven 50 HP slip ring motor.
Worthington two-stage, water-cooled, vertical 250#, 80 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

2036 Cedarapids primary unit.
1036/2418 Cedarapids Jr. Tandem unit.
4024 Cedarapids roll, rebuilt.
3018 Cedarapids roll, rebuilt.
36" x 14' apron feeder, rebuilt.
Cedarapids Rock-It plant with 2025 jaw, 3033 mill. New.
Cedarapids 1236 Model 6C plant, new.
4033 Cedarapids Hammermill, rebuilt.
1030 Good Roads. Reconditioned.
10x7 Allis-Chalmers Blake type jaw crusher.
#1 Cedarapids Kubit impact breaker.
4' x 6' Kennedy Van Saun single deck.
3' x 8' Kennedy Van Saun triple deck.
15 cu. yd. Cedarapids sand drag, new.
16" x 90' bucket elevator.
80-ton, 2-compartment, 8'x18' storage bin with clamshell gates.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.

TRUCKS—TRAILERS

1½-ton Ford with any body.
2½-ton GMC, rebuilt.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.
Model CH Tournapull w/16-yd. Model E16 Tournarocker, rebuilt.

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain 77, 1½-yd. shovel, gas power.
Lorain 37, 1¼-yd. diesel. Excellent.
Lorain L-50, 1-yd. diesel. New condition.
Lorain 40 truck crane on Mack 3-axle truck.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 636 for ¾-yd. to 1-yd. crane.

Backhoe Buckets & Attachments

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #6105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #9101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

2—45" Ohio lifting magnets, rebuilt.
1—36" ECM lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8539.
Lorain 75B, 1¼-yd. extended lip, 1¼-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with ball & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
1220'—Heltzel 9"x8" road forms with stakes.
Cleveland formgrader, new 1944, rebuilt.
Corr formgrader, new 1944, rebuilt.

TRACTORS

Ford Dearborn rubber tired with hyd. front end loader and hoe attachment.
TD9 International diesel with 1 yd. Loadover.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching Machine 18" to 24" cutting width, 7' depth.

PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3000 GPM at 120' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

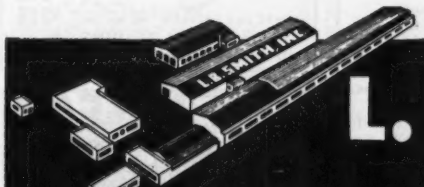
GRADERS

Austin Western 77 tandem drive, scarifier, 12' blade, gas power, hydraulic controls.

GASOLINE AND DIESEL ENGINES

Caterpillar D11000, rebuilt.
Caterpillar D13000, rebuilt
Buda, Hercules, Hill diesels, rebuilt.
New and rebuilt Murphy diesels, ME-4 & 48.

***Phone* HARRISBURG, PA. 7-3431**



L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

DIESEL POWER

FOR

IMMEDIATE SHIPMENT

UNIT CAPACITIES—10 TO 1875 KVA

A.C.—50 AND 60 CYCLES

VARIOUS VOLTAGES

A PARTIAL LISTING OF OUR INVENTORY

KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1136	Fairbanks Morse	38D	1600	720	320	Enterprise	DSG-6	560	450
1100	General Motors	16-278A	1600	720	300	General Motors	8-268A	450	1200
750	General Motors	12-567	1080	720	200	General Motors	8-268A	350	900
500	General Motors	8-278A	750	720	100	General Motors	3-268A	150	1200
500	General Motors	8-567	720	720	100	Worthington	BB-5	150	600
350	Baldwin	VO-6	510	450	60	General Motors	6-71	90	1200
320	Buckeye	80	480	600	30	Internat'l Harvester	UD-14	45	1200

D.C. UNITS ALSO AVAILABLE

A. G. SCHOONMAKER COMPANY, INC.

DIESEL DIVISION, 50 CHURCH ST., NEW YORK 7, N. Y.

IMMEDIATE DELIVERY

NEW MACHINERY PARTS

for

Caterpillar
Bucyrus-Erie
Euclid
International
Lorain
LeTourneau
and other Misc. Parts

MAIL REQUIREMENTS

P. O. Box 53
Trenton, N. J.

FOR SALE

REX MOTO MIXERS

IMMEDIATE DELIVERY

5—8 CUBIC YARD CAPACITY MOTO MIXER (NO CHASSIS)
AGC RATING — 8 YD. MIXER, 10½ YD. AGITATOR
316 GALLON MIXING TANK—40 GALLON FLUSHING TANK.
CHRYSLER ENGINE FLUID COUPLING DRIVE.

EDWARD EHRBAR, INC.

29 MESEROLE AVE. EVergreen 3-5000
BROOKLYN, N. Y. C. B. De LEON

SALE OR RENT

1—D-6 Front-end Loader
1—TD-9 Front-end Loader 1950
1—25-Ton Link Belt HC-90 Truck Crane 120' Boom
1—20-Ton Bay City Truck Crane, 80' Boom, 15' Jib
1—20-Ton Lorain 414 Truck Crane
1—¾ Yd. Bay City Diesel Crane
1—2 Yd. Koehring 883 Crane
1—335 P & H Dragline
1—50-Ton Whitcomb Diesel Elec. Locomotive
1—44-Ton G.E. Diesel Elec. Locomotive
2—No. 6 and 80-D Northwest Shovels
1—Northwest 25 Shovel Attachment
1—40-Ton Industrial Brownhoist Oil Fired Loco. Crane, New 1943
1—41-B Bucyrus Steam Crane

B. M. WEISS CO.

Girard Trust Co. Bldg. Phila. 2, Pa.
Rittenhouse 6-2311

SHOVELS—CRANES—DRAGLINES

Buc-Erie 170-B Electric Shovel. New 1949.
Buc-Erie 120-B Electric Shovel. 5 yds.
Page 625-B Diesel Dragline 150 ft. boom.
Page 618-S Diesel Dragline 110 ft. boom.
Koehring 304 Shovel ¾ yd. Rebuilt. Diesel.
P&H 855-B 1½ yd Shovel-Crane-Drag. Diesel.
Northwest 80-D Dragline. Diesel. 100 ft. boom.
Lorain Motocrane MC4 15-18 tons capacity.
Koehring 304 Truck Crane 20 tons cap. 80' boom.
P&H 255-A 20 ton Truck crane 80 ft. boom.
Link-Belt K-520, Diesel Shovel, 3 yds.
Link-Belt K-595 Dragline, 2½ yds. Diesel.
Lorain L-82 Diesel Shovel, 2 yd.

TRAXCAVATORS—PAYLOADERS

Cat. D7 Traxcavator. Rebuilt
Cat. D7 Traxcavator. Rebuilt.
Cat. D4 Traxcavator. Rebuilt.
Hough Payloaders Models HLA, HFH, HE, HA.

CONCRETE PLANTS—BINS & SILOS

B-K P-4120, 3 compt., agg., one for cement.
Large plant 212 yds., 6 compt., agg. and cement elevators, 56-S Mixer. Excellent.
Large plant 400 yds., 5 compt. with 2 yd. Koehring Mixers. Write for details.
Cement bin 400 bbls. with batcher. NEW.
Agg. bin 100 tons 3 cpts. 2 yd. weighbatcher. New.

ASPHALT PLANTS

Cummer 1500 lbs. Semi-Port. Very good.
Std. 1500 lbs. Batch. Sta. Bit.
Simplicity Model S-100. Diesel powered.
Madsen 4000 lbs. Used but little. Excellent.
B-G Model 840-830 Maintenance Plant. Complete.
Cedar Rapids Travel Mix Plant 100-150 tons.

STIFF LEG AND GUY DERRICK

Steel 35' stiff leg derrick 100' boom.
American 20 ton stiff leg derrick 90' boom.
Stiff leg derrick 15 ton 100 ft. boom.
American 20 ton Guy derrick 100 ft. boom.

CONCRETE MIXERS AND PAVERS

Jaeger BP-S Asphalt Paver & attachments.
2 Ransome 34-E Dual Drum Pavers Diesel.
Rex 28-S Builders Mixer. Elec. New 1947.
Koehring 4 yd tilting mixer, complete electric.

ROAD AND AIRPORT FORMS

Blaw-Knox and Heltzel 8100 ft. 9"x9"; 10,000 ft. 8"x8". 6600 ft. 12"x9" airport forms.

RICHARD P. WALSH CO.

30 Church St. New York 7, N. Y.
Cable RICHWALSH Cortlandt 7-0723-4

AIR COMPRESSORS

17 Diesel 315, 500, 630, 900 & 1500 Ft.
23 Elect. 676, 1080, 1302, 1730, 2200, 3178, 3885 Ft.
11 Low Pres. 743, 1080, 2200, 3000 & 5040 Ft.

CRANES — SHOVELS — DRAGLINES

7—Diesel & Steam Loco. Cranes—20, 25, 30 & 40 T.
9—25, 40, & 60 Ton Steam & Elec. Whirley Cranes.
3—41B Bucyrus 1-¼ Yd. 60' Boom Steam Crane.
30 Ton Ohio Diesel Locomotive Crane.
54B Bucyrus, 80D Northwest Diesel Shovels-Drags.

TUNNEL EQUIPMENT

33—Conway, Enco & Gardner Denver Tnl. Shts.
26—Battery & Trolley Locomotives, 4, 6, 8 & 10 T.
266—Tunnel Cars, 1, 2, 4, 6 & 8 Yd. Cap.

RAILROAD CARS

164—Dump Cars 1½, 2, 3, 5, 16, 20 & 30 Yd. Cap.
96—10,000 Gal. Tank Cars—100 Box Cars.
128—40 & 50 Ton Flat Cars—65—50 Ton Gondolas.

LOCOMOTIVES

17—Diesel 100, 80, 65, 30 & 10 Ton.
42—Gasoline 25, 25, 20, 16, 10 & 8 Ton.
9—Steam, 40, 50, 60 & 100 Ton.

HOISTING ENGINES

STEAM: 14x12, 9x10, 8¼x10 & 7x10.
ELECTRIC: 30, 40, 60, 80, 100, 125 & 150 H.P.

PILE HAMMERS & EXTRACTORS

9—McKiernan-Terry No. 58, 3, 5, 6, 7, 9B3, 10B3, 8S, 11B3. Also Union No. 1.
Vulcan 800 & Vulcan #2 & #4 5000,

PUMPCRETE

Model 160, 190 & 180 & 200 REX Pumpcretes.

STEEL DERRICKS

2—Clyde 15 ton Stiff Leg 100 & 125' Boom.
2—Terry 25 ton, 100' Boom Guy Steel Erectors.
3—7-10 Guy 85' & 50 Ton 100'.

STEEL STORAGE TANKS

17—10,000-15,000 & 25,000 & 42,000 gal. cap.

R. C. STANHOPE, INC.

Tel: MUrray hill 2-3075 60 E. 42 St., N. Y.

Pile Driving Equipment

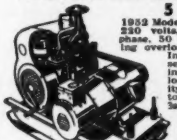
Vulcan and McKiernan-Terry
Steam Pile Hammers and Extractors
Pile Driving Accessories
Drop Pile Hammers and Caps
Steel Sheet Piling

CONTRACTORS MACHINERY Co.

2637 Southwest Blvd. Kansas City 8, Mo.
Phone Valentine 4740

BARGAIN LIGHT PLANT

5 to 6 KW



Brand New

1932 Model. 5000 watts, 110/220 volts. 60 cy. AC, one phase, 50 amps. Takes starting overload up to 87 amps. Integrally mounted separate exciter giving exceptional overload and surge capacity for starting motors. Drip-proof constr. Ball bearing lifetime lubrication. Voltmeter, 2 plug-in receptacles. Wisc. air cooled. 2 cyl. 4 cy. 10½ HP engine. Special Price **$645**
Wt. 575 lbs
Generator only Wt. 328 lbs... **$325**

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WELLWORTH TRADING CO.

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Locomotive Cranes
Crawler Cranes
Gantry Cranes
41-B, 50-B, 30-B, BE
Steam Cranes
Locomotives
Railroad Cars
Pumpcrete
Dredges, Hydraulic
Boilers
Generators
Stacktline
Tugs & Boats
Derricks
Hoists

STONE THE CRANE MAN

1132 Prudential Bldg Buffalo 2, N. Y.

FOR SALE

65 Ton G.E. Diesel Elec. Locomotive.
50 Ton Colby 240 Elec. Gantry Crane.
7 Caterpillar DW10 Tractors-Wagons.
3 Yd Lima 1201 Dragline 120' Bm. 1947.
30 Ton American Stiffleg Derrick. New.
30 Ton Ind. Brownhoist Gas Loco. Crane.
130 HP Christian 2D Diesel Hoist.
Rex 200 Single Pumpcrete. Gas Powered.
Northwest 80D 2½ Yd. Diesel Comb.

MISSISSIPPI VALLEY EQUIPMENT CO.

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Don't buy trouble . . .
Buy McCoy
Caterpillar Dealer
DEPENDABLE
USED EQUIPMENT

Largest Inventory in Rocky Mountain Empire. One of the West's most modern and complete equipment repair shops.

All Items are Below Present Ceiling Prices

1 Lima 34 Paymaster with Cummins Diesel Engine, combination shovel, trench hoe and dragline. Excellent buy.

1 Osgood ½ yd. combination shovel and dragline with GMC Diesel engine. Very good condition.

1 Allis Chalmers HD10 Tractor. Good working condition. Priced to sell.

1 Allis Chalmers HD7 with hydraulic angledozer. Very good condition. Low working hours.

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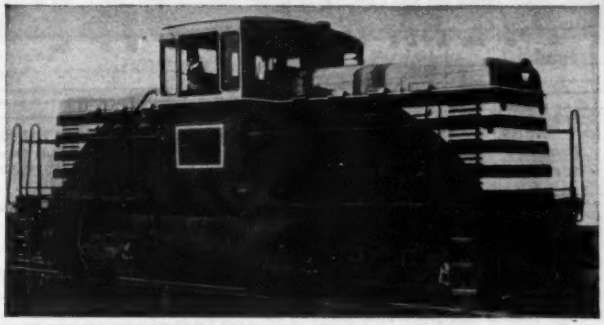

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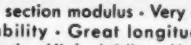

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Bids: August 14, 1952

Soil Explorations and Foundation Investigations at Various Sites on the New York State Thruway, Hudson Section Subdivision 7, Suffern to Harriman, City of Suffern and Township of Ramapo, Rockland County, Which Constitutes Contract No Spec. SM-39.

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on August 14, 1952 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

Maps, plans and specifications may be examined and obtained at following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.
(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $29,725.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1,487.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. TALLAMY
Superintendent of Public Works

Bids: August 14, 1952

Soil explorations and foundation investigations at various sites on the New England thruway, post road to Larchmont, towns of New Rochelle and Larchmont, city of New Rochelle, Westchester county, which constitutes contract No. Spec. SM-40.

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on August 14, 1952 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

Maps, plans and specifications may be examined and obtained at following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.
(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $16,440.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $822.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. TALLAMY
Superintendent of Public Works

Bids: September 3, 1952

Delaware River Joint Toll Bridge Commission

526 Broad Street Bank Building
Trenton 8, New Jersey

NOTICE TO CONTRACTORS

Sealed proposals for the construction of the eastern approaches for three bridges over the Delaware River, between Pennsylvania and new Jersey will be received by the Delaware River Joint Toll Bridge Commission at its office, 526 Broad Street Bank Building, Trenton 8, New Jersey, until eleven o'clock (11:00) A.M., E.D.S.T., on the 3rd day of September 1952, at which time and place all bids will be publicly opened and read aloud.

After July 28, 1952, Instructions to Bidders, form of Proposal, form of Contract, form of Performance Bond, Plans and Specifications may be examined at the office of the Commission, above address, and copies thereof obtained upon payment of $10.00 for each set, which amount is not returnable.

The names, location and approximate quantities of major items for the three approaches are as follows:

NEW JERSEY APPROACHES

Contract No. 105—Delaware Water Gap Bridge	
Earthwork	112,000 c.y.
Pipe Drains (6-in. to 30-in.)	6,200 l.f.
Inlets	31 units
Concrete	1,700 c.y.
Concrete Pavements	15,000 s.y.
Contract No. 205—Portland-Columbia Bridge	
Earthwork	166,000 c.y.
Pipe Drains (6-in. to 72-in.)	14,000 l.f.
Inlets and Manholes	61 units
Concrete	17,000 c.y.
Concrete Pavements	25,000 s.y.
Concrete Curb	11,000 l.f.
Topsoil, Seeding and Mulching	50,000 s.y.
Contract No. 305—Milford-Montague Bridge	
Earthwork	30,000 c.y.
Pipe Drains (6-in. to 48-in.)	1,600 l.f.
Stabilized Shoulders	6,000 s.y.
Bituminous Macadam Pavements	8,000 s.y.
Topsoil, Seeding and Mulching	15,000 s.y.

Proposals may be submitted for any one approach: for any two approaches, or for all three approaches.

Each Proposal must be accompanied by a certified check in the amount of not less than five (5) per cent of the amount of the Proposal. If the bidder submits Proposals for more than one contract, a single certified check in the amount of not less than five (5) per cent of the largest amount of work included in a Proposal will be sufficient.

All checks shall be made payable to the Delaware River Joint Toll Bridge Commission, which amounts shall be forfeited as liquidated damages if the bidder or bidders fail, within ten (10) consecutive calendar days after written notice that the bidder or bidders have been awarded the contract, to enter into a written contract with the Commission in accordance with the accepted bid, and to give a Performance Bond satisfactory to the Commission, equal to one-hundred per cent (100%) of total amount of contract.

The Commission reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work, and to the bidder whose proposal is deemed by the Commission to be most advantageous to the public interest.

DELAWARE RIVER JOINT TOLL BRIDGE COMMISSION
Alexander R. Miller, Chairman

July 28, 1952

Bids: August 20, 1952

Delaware Memorial Bridge Planting Operations

NOTICE TO BIDDERS
CONTRACT NO. 23

Sealed proposals for Planting Operations along the approaches to the Delaware Memorial Bridge, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Administration Building, Delaware Memorial Bridge, Delaware, until 12 o'clock noon, Eastern Daylight Saving Time, August 20, 1952, at which time and place said proposals will be publicly opened and read.

The work involves the following approximate principal quantities.

Topsoil	1,380 cu. yds.
Peat Moss	76 bales
Manure	36 cu. yds.
Commercial Fertilizer	275 lbs.
Grass Seeding	6,560 sq. yds.
Major Trees	171
Minor Trees	381
Shrubs	1,582
Vines	1,270
Perennials	45 clumps
Bulbs	800

Performance of this Contract shall begin promptly after execution of the Contract and shall be completed on or before November 15, 1952.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check to the amount of at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

One set of the Plans and two copies of the Specifications may be obtained from the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y., after August 8, 1952, upon payment of $10.00.

Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing and an extra copy of the Specifications upon payment of $2.50 per copy.

Plans and Specifications need not be returned to the Engineers, and the above payments will not be refunded.

The plans and Specifications and other contract documents may be examined at the office of the Engineer, Howard, Needles, Tammen & Bergendoff, or at the Engineers' project office located north of and adjacent to the west abutment of the Delaware Memorial Bridge in the state of Delaware.

State Highway Department
by: J. H. Tyler McConnall, Chairman
W. A. McWilliams, Director
Delaware Crossing Division
August 7, 1952

U. S. Government

Department of Commerce, Bureau of Public Roads, August 5, 1952. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., D.S.T., SEPTEMBER 5, 1952, for Project 1F5-G5, Baltimore-Washington Parkway, Prince Georges and Anne Arundel Counties, Maryland. 2.869 miles Concrete Paving and other work from Laurel-Bowie Road to Laurel-Ft. Meade Road. The approximate quantities of the more important items are: 16,250 cu. yd. Excavation, 16,000 cu. yd. Borrow for Topping, 42,000 sq. yd. Reinforced Cement Concrete Pavement, and 1,250 units of Seeding. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above. H. J. Spelman, Division Engineer.

OFFICIAL PROPOSALS

Bids: August 21, 1952

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON THE NEW YORK STATE THRUWAY, CATSKILL SECTION, SUBDIVISION 4, WHITEPORT TO NEW PALTZ, ULSTER COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-42

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the Provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on August 21, 1952 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York

(b) J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.

(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $20,100.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1,005.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPERINTENDENT OF PUBLIC WORKS

Bids: August 28, 1952

Interior Store Finishes Room 1209

THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUS TERMINAL
CONTRACT BT-110.067

Sealed proposals for furnishing and installing interior store finishes and equipment for Room 1209 on the Main Concourse in the Port Authority Bus Terminal will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:00 A. M. Thursday, August 28, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $10 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, August 14, 1952.

Read the Official

Proposal Columns of

ENGINEERING NEWS-RECORD

This Week and Every Week

OFFICIAL PROPOSALS

Bids: August 21, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on Thursday, August 21, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. Nickerson, Dist. Engr., 333 Broadway, Albany, N. Y.				
Greene	SH52-6	Catskill Village: Allen Street (Connect. S.H.5685 & S.H.1934)	0.17	Asp. Conc. Ty. 1-A, Opt.	$6,000 Plans $10	$107,000
		DISTRICT No. 3				
		Wm. Robinson, Dist. Engr., 301 E. Water Street, Syracuse, N. Y.				
Onondaga	FARC52-68	Marietta-Marcellus, S. H.971 Skaneateles-Lafayette, Pts. 2&3 S.H.5360-8373 Proj. F470(15) (Cont. No. 2)	11.21	Asp. Conc. Ty. 1-A Opt.	$60,000 Plans $25	$1,131,000
		DISTRICT No. 4				
		J. P. Larsen, Dist. Engr., Barge Canal Terminal, Rochester, N. Y.				
Monroe	FAC52-12	Rochester City: Inneloop (Front St.–Main St. West) Proj. U1089(3)	0.47	Asp. Conc. Ty. 2-A Hy. Sep. Built-up Beam 100.6' Sp.	$70,000 Plans $25	$1,295,000
		DISTRICT No. 5				
		C. R. Watrus, Dist. Engr., 65 Court Street, Buffalo, N. Y.				
Erie	FARC52-83	Transit Road, Pt. 4, S.H.1334B Proj. F651(6)	0.69	Asp. Conc. Ty. 2-A=0.68 mi. Misc. Work=0.01 mi. 30' Conc. Slab	$15,000 Plans $10	$270,000
Niagara	FAC52-11	City of Lockport: Walnut Street Arterial Rte. Proj. U709(3)	0.52	Asp. Conc. Opt. =0.51 mi. Misc. Work =0.01 mi.	$15,000 Plans $10	$256,000
		DISTRICT No. 7				
		C. C. Cassel, Dist. Engr., 444 VanDuzee Street, Watertown, N. Y.				
Clinton	FARC52-84	Plattsburg-Ausable Chasm, Pt. 1, S.H. 5191 Proj. F489(6)	6.89	Asp. Conc. Ty. 1-A, Opt. 30' Conc. Slab	$22,000 Plans $10	$397,000
		DISTRICT No. 8				
		J. S. Bixby, Dist. Engr., Pleasant Valley Road, Poughkeepsie, N. Y.				
Westchester	TSP52-3	Taconic State Parkway		Traffic Control Signal	$330 Plans $10	$6,000
		DISTRICT No. 10				
		J. J. Darcy, Dist. Engr., Little E. Neck Rd. & Montauk Hy., Babylon, L. I., N. Y.				
Bronx	FACBE52-1 Cont. 98	Cross Bronx Expressway, Proj. UI-1094(16)	0.65 Exp. 1.72 Acc.	9" Cem. Conc. Pavt. 2 @ 36' & Var.= 0.95 Mi. Sheet Asp. Pavt.= 1.23 Mi. Misc. Work = 0.19 Mi. Hy. Sep. 2 Sp. Rigid Frame 99.67' Hy. Sep. 2 Sp. Rigid Frame 103'	$262,000 Plans $100	$4,813,000
Nassau	FA NE52-1	Nassau Expressway (Seagirt Blvd. Interchange) (Cont. 2) Proj. U1098(2)	1.03	Asp. Conc. Ty. 1-A, Opt. =1.02 mi. Misc. Work=0.01 mi. 2 Sp. Steel Beam Bridge 53' Each with 2 Reinf. Conc. Approach Spans	$30,000 Plans $15	$544,000
Suffolk	SMSP52-2 RC52-85	Sunken Meadow Spur Parkway (Cont. 3) Jericho Turnpike, Pt. 3, SH5112	1.17	Grading=0.30 mi. Asp. Conc. Ty. 1-A, Opt.=0.87 mi. 3 Hy. Sepa. Rigid Frames 126.33'; 66.8' & 66.67'	$55,000 Plans $25	907,000
Suffolk	FASH52-12 FARC 52-82	Sunrise Highway Extension, Pt. 8 (Great River–Broadway Ave.) Sunrise Highway Extension Pt. 6, S.H. 8460 Bayshore-Brookhaven Town Line S.H. 5301 Proj. Nos. U947(8) & U636(20)	5.22	9" Cem. Conc. Pavt. 2 at 25'=5.30 mi. Misc. Work=0.02 mi.	$130,000 Plans $25	$2,346,000

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3769) will be received at Fort Peck, Montana until August 26, 1952, for furnishing labor and materials for earthwork, excavation for dam foundation, Missouri Diversion Dam, Missouri-Souris Division, Missouri River Basin Project.

U. S. Government

Location: Six miles southwest of Frazer, Montana. Principal items are: Excavation, 264,000 cu. yds. Completion time 190 days. For particulars, address Bureau of Reclamation, Fort Peck, Montana; or Building 53, Denver Federal Center, Denver, Colorado.

OFFICIAL PROPOSALS

Bids: September 9, 1952

Road Work

SEALED PROPOSALS will be received by the President of the Levy Court of New Castle County, Room 134-A, Public Building Wilmington, Delaware, until 11:00 A.M. Daylight Saving Time, on September 9, 1952 and at that time publicly opened for contracts involving the following approximately quantities:

CONTRACT SD-9
BLUE ROCK MANOR
Prospect Drive
New Castle County

3,450	C.Y. Excavation
50	C.Y. Borrow Pit Stripping
500	C.Y. Selected Borrow
2,000	Tons Water Bound Macadam
750	Tons Hot Mix Asphaltic Concrete
8.0	C.Y. Cement Concrete Pavement
130	S.Y. Cement Concrete Gutter
4,060	L.F. Integral Conc. Curb and Gutter
1,150	S.Y. Topsoil
0.25	A. Seeding
1	S.Y. Flagstone Sidewalk
1,500	Gals. Tack Coat, R. C.1
8	Each Adjusted Manholes
1	Each Adjusted Lampholes

CONTRACT SD-40
Westwood Manor
New Castle County

3,500	C.Y. Excavation
55	C.Y. Rock Excavation
50	C.Y. Borrow Pit Stripping
1,500	C.Y. Selected Borrow
1,600	T. W. B. Macadam
640	T. Hot Mix Asphaltic Conc.
0.5	C.Y. Conc. Masonry
220	Lb. Reinf. Steel
99	L.F. 12" R.C. Pipe
21	L.F. 15" R.C. Pipe
399	L.F. 18" R.C. Pipe
90	L.F. Relay 4" Vit. Clay Pipe
25	L.F. New 4" Vit. Clay Pipe
3,860	L.F. Integral Curb & Gutter
5	ea. Catch Basins
1	ea. Man Holes
2,500	Lb. Castings
1,100	S.Y. Topsoil
0.22	A Seeding
1,000	Gal. Tack Coat R.C. 1
7	ea. Special Frame & Cover for Center Stone Mon.
7	ea. Adjusting Stone Mon.

CONTRACT SD-42
BLUE ROCK MANOR
(Median Drive)
New Castle County

2,450	C.Y. Excavation
100	C.Y. Borrow Pit Stripping
1,300	C.Y. Selected Borrow
1,400	T. W. B. Macadam
550	T. Hot Mix Asphaltic Conc.
250	Gal. Tack Coat R.C. 1
10	L.F. 4" V. C. Pipe
10	L.F. 6" V. C. Pipe
120	S.Y. Cement Conc. Gutter
3,650	L.F. Integral Conc., Curb & Gutter
85	S.F. Sidewalk Cement Conc.
1,000	S.Y. Topsoil
0.20	A. Seeding

CONTRACT SD-43
WOODCREST
New Castle County

50	C.Y. Excavation
60	T. W. B. Macadam
20	T. Bituminous Concrete
165	S.Y. Cement Concrete Gutter
1,500	L.F. Integral Curb & Gutter
1,300	L.F. Removal of Existing Curb and Gutter
1,500	Gals. R.C. 3 Seal Coat
70	T. ¼" Stone Chips
7	Each Special Frame and Cover
77	Each Adjusting Stone Monument
2	Each Adjusting Manholes

Attention is called to the Special Provisions in the proposal, specifications and contract agreement.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the County Engineer.

OFFICIAL PROPOSALS

Each proposal must be accompanied by a surety bond, certified check, or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal must be marked "Suburban Development Contract No. ————."

The contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

Complete sets of plans and specifications may be obtained after August 5, 1952 upon receipt of two dollars ($2.00) for each contract, which amount will not be refunded.

Make checks payable to the Levy Court of New Castle County.

LEVY COURT OF NEW CASTLE COUNTY
BY: JOHN TAYLOR
COUNTY ENGINEER

Bids: August 26, 1952

Franklin Lake Road

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Construction of Franklin Lake Road from a point 630' Northwest of Oakland Borough Line Southwesterly for 1550' and from High Mountain Road to Russell Avenue in the Boroughs of Oakland and Franklin Lakes and in the Township of Wyckoff, Bergen County, Federal Aid Secondary Project No. S-181(1). Length 1.949 miles. The principal items of construction are:

Estimated:
7,728 cu. yds. Excavation-Earth
2,270 tons Bituminous Concrete
26,928 sq. yds. 3" Mod. Pen. Macadam
17,083 sq. yds. 4" Mac. Base Course
5,590 lin. ft. Drainage
53,856 gals. Bituminous Material

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, August 26, 1952, at ten o'clock (10:00 A.M. —EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.
NOTE: The proposed project is a "Federal Aid Secondary Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P. L. 769, 81st Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, Fulton & Paterson Streets, Paterson, N. J. or 28 Prospect Street, Ridgewood, N. J. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office

(Continued next page)

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This index is published as a convenience to the reader. Every care is taken to make it accurate but Searchlight Section assumes no responsibility for errors or omissions.

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Wilson Engineering Corp. 106

Young & Son Inc., R. A. 114

Zion Illinois, City of 105

OFFICIAL PROPOSALS

Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: September 30, 1952

Northwest Interceptor

NORTHWEST INTERCEPTOR—
SOUTHFIELD SECTION
DEPARTMENT OF PUBLIC WORKS
CITY OF DETROIT, MICHIGAN

CONTRACTS PW-1406, 1407, AND 1408

Sealed proposals for Northwest Interceptor—Southfield Section, extending from the southerly end of the existing Southfield sewer in the City of Dearborn to the Rouge River at Bayside Avenue in the City of Detroit, addressed to the City Engineer's Office, Department of Public Works of the City of Detroit, and endorsed "Proposals for Contracts PW-1406, 1407, and 1408" will be received at the Office of the City Engineer, 30th Floor, Guardian Building, until 2:00 p. m., City of Detroit Time, on Tuesday, September 30, 1952, at which time they will be publicly opened and read aloud. Any proposal received after the above-mentioned time will be returned to the bidder unopened.

Bids on this work were originally taken on March 20, 1951.

The work included consists of approximately 3.6 miles of 10'-0" diameter sewer under streets and rights-of-way, extending from the southerly end of the existing Southfield sewer in the City of Dearborn to the Rouge River at Bayside Avenue in the City of Detroit. The greater portion of the sewer will be a cylindrical tunnel of concrete or brick construction.

The work is separated into three Contracts, namely, PW-1406, 1407, and 1408. Bidders may bid on any or all of the three Contracts, or may submit a combined bid on any combination of Contracts.

Approximate lineal feet of main sewer in each Contract beginning at the Rouge River is as follows:

PW-1406—7,092
PW-1407—5,287
PW-1408—6,551

Total 18,900 = 3.6 Miles Approximately

The Contract Documents, including Notice to Bidders, Form of Proposal and Agreement, Drawings and Specifications, may be examined and copies may be obtained at the Office of the City Engineer, 30th Floor, Guardian Building, Detroit 26, Michigan, by making a deposit of $15 per set which sum will be refunded upon the return in good condition of the complete set of Contract Documents within 10 days after receipt of proposals, or if used in submitting a bona fide proposal.

Each proposal shall be accompanied by a certified check or a satisfactory bidder's bond in an amount not less than 5 percent of the total bid price as security for the acceptance of the Contract.

Checks shall be made payable to the Treasurer, City of Detroit.

The National Production Authority had previously made an allotment of controlled materials for the second, third and fourth quarters of 1952, and the first quarter of 1953. The City has an application now on file with N.P.A. to reschedule the allotment for the fourth quarter of 1952 and the first, second and third quarters of 1953.

After the scheduled closing time for receipt of bids, no proposal may be withdrawn for at least 45 days.

The City of Detroit reserves the right to waive any informality in any bid, or to accept any bid, or to reject any or all bids, should it be deemed for its best interests so to do.

CITY OF DETROIT
CARL D. WARNER, COMMISSIONER
DEPARTMENT OF PUBLIC WORKS
G. R. THOMPSON
CITY ENGINEER

OFFICIAL PROPOSAL

RATE: $1.50 per line (or fraction) per insertion.
CLOSING DATE: 10:30 A.M. Friday for issue out following Thursday.
SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

Bids: September 16, 1952

WATER PURIFICATION PLANT AND PIPE LINES
FILTER EQUIPMENT
STEEL STANDPIPE
THE VILLAGE OF HIGHLAND FALLS, ORANGE COUNTY, NEW YORK

Sealed proposals will be received at the Village Hall, Highland Falls, New York, until 8:00 P.M., Eastern Daylight Saving Time, September 16, 1952, for furnishing all necessary labor, materials and equipment and performing all work for the construction of a Water Purification Plant and pipe lines, filter equipment and steel standpipe and will there be publicly opened and read aloud.

Separate proposals will be received upon the three parts of the project as follows:

1 million gallon per day rapid sand filtration plant including filter building, settling basin, aerator, piping to, from and through the plant to the limits defined on the plans, together with valves and all necessary appurtenances, pumping equipment, standpipe foundations, etc.

Filter equipment for 1 million gallon per day capacity to the limits defined.

Steel standpipe of 500,000 gallon capacity erected on foundations furnished by others.

Proposals shall be accompanied by certified check in accordance with provisions contained in the specifications in an amount of five per cent (5%) of the base bid.

Copies of the Contract Documents, including plans and specifications, may be obtained at the office of Edna C. Gross, Village Clerk, Highland Falls, New York, upon payment of $25.00 for each set. Any bidder upon returning documents in good condition will be refunded his payment and any nonbidder will be refunded $15.00.

BOARD OF TRUSTEES OF THE VILLAGE OF HIGHLAND FALLS, ORANGE COUNTY, NEW YORK.
Myron Brogi, Mayor
Dated: August 6, 1952
Morrell Vrooman Engineers
Consulting Engineers
Gloversville, New York

Bids: August 28, 1952

Tiling of South Stairwell—New Jersey Administration Building Holland Tunnel

THE PORT OF NEW YORK AUTHORITY
CONTRACT O & M—163
PROPOSAL NO. 886

Sealed proposals for installation of tile on the south stairwell, New Jersey Administration Building, Holland Tunnel, Jersey City, New Jersey will be received at the office of the Director of Purchase of The Port of New York Authority, Room 1402, 111 8th Ave., New York 11, until 11:00 AM (EDST), Thursday, August 28, 1952, at which time and place proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

The Port of New York Authority
Howard S. Cullman, Chairman
New York, August 14, 1952

Bids: September 16, 1952

Construction of a Collecting Sanitary Sewer System and Appurtenances

NOTICE TO CONTRACTORS

Sealed proposals will be received by the Springettsbury Township Sewer Authority of Springettsbury Township, York County, Pennsylvania in the Springetts Fire House, 2914 E. Market Street, York, Penna., until 7:30 P. M. Eastern Daylight Time, the day of September 16, 1952, for the CONSTRUCTION OF A COLLECTING SANITARY SEWER SYSTEM AND APPURTENANCES IN SPRINGETTSBURY TOWNSHIP, YORK COUNTY, PENNSYLVANIA, at which time and place they will immediately be publicly opened and read aloud.

The work under this contract will consist of the Construction of Approximately 16,600 lineal feet of Vitrified Clay Pipe Sewer 8" to 24" diameter and approximately 1,800 lineal feet of C.I.P. 8" to 24" in Diameter placed near Mill Creek in Springettsbury Township, York County, Pennsylvania. Also an inverted siphon beneath Codorus Creek. Manholes, diversion chambers and appurtenances included.

The information for Bidders, Form of Contract, Plans, Specifications and Form of Performance Bond may be examined at the office of the Weigle Engineering Company, #30 N. Duke St., York, Pa., copies thereof may be obtained at the said office of the Weigle Engineering Company, upon payment of $30.00 for each set. Any bidder upon returning such set in good condition will be refunded his payment and any nonbidder upon so returning such set will be refunded $15.00, provided that said Plans and Specifications are returned within 15 days after the date of the opening of Bids. If the plans and specifications are not returned within the stated time the entire amount of the deposit will be forfeited.

The Springettsbury Township Sewer Authority reserves the right to waive any informalities in, or to reject, any or all bids.

A bid bond or certified check made payable to the Springettsbury Township Sewer Authority in the amount of five (5%) per cent of the bid must be deposited by each bidder with his bid as a guarantee that in the case the contract is awarded to him, that he will within five (5) days, execute such contract and furnish a satisfactory Performance Bond. On failure to do so he shall forfeit the deposit as liquidated damages, and acceptance of the bid will be contingent upon the fulfillment of this requirement by the Bidder.

The successful bidder will be required to furnish a Performance Bond in the amount of the Bid submitted, and a separate Labor and Materialman's Bond in an amount equal to 50% of the total of the bid submitted. These bonds shall have a Surety Company or Companies thereon as are acceptable to the Authority.

No Bidder may withdraw his bid within forty-five (45) days, after the date set for the opening thereof. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof.

SPRINGETTSBURY TOWNSHIP SEWER AUTHORITY
Gerald Workinger, Secretary
23 South Vernon Street
York, Pennsylvania
Date August 7, 1952

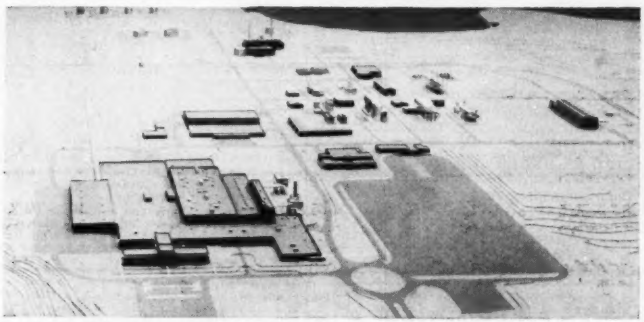
Bids: September 8, 1952

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
INSTALLATION OF REGULATOR VALVES
CONTRACT NYA-130.009

Sealed proposals for the installation of regulator valves at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:00 A. M. Monday, September 8, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $25 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, August 14, 1952



INTEGRATED NYLON PLANT—Production of nylon salts and spinning of fiber, together with all intermediate stages, will be combined in Chemstrand's new plant, scheduled for completion in about 18 months a few miles north of Pensacola, Fla. Du Pont is prime contractor for the project, being built under a quick-tax-write off certificate for $88 million. Scale model shows offices and spinning area (lower left) and chemical area (upper right) where raw materials will be produced.

Chemicals boom in Florida

Chemical manufacturers have been quietly trekking to Florida and an estimated $150 million is being spent by them in building new facilities or expanding old plants.

Biggest of the new projects is Chemstrand's nylon filament yarn plant under construction on a 2,000-acre tract bordering the Estambia River some 12 miles north of Pensacola. It will cost upwards of $85 million and have an annual capacity of about 50 million lbs of yarn.

A recent discovery that uranium can be recovered as a byproduct of phosphate, Florida's chief mineral, has resulted in three big chemical firms starting work on multi-million dollar plants which will recover uranium for the Atomic Energy Commission.

According to Chemical Week, Florida phosphate deposits account for about 38% of all the known U. S. reserves, and about 75% of the nation's phosphate rock supply is produced in the state. Florida's phosphate rock deposits are believed to be adequate for hundreds of years.

• **Dragline stripping**—It costs from $1 to $2 a ton less to mine the rock in Florida. That's because of level terrain in the prosphate fields of Hillsborough and Polk counties permits dragline stripping in open pits.

Since it takes about seven tons of rock for a ton of phosphorous, the saving amounts to from $7 to $15 a ton, or from five to ten per cent of production costs.

International Minerals and Chemicals Corp. expects to have a new plant costing $11.8 million in operation at Bonnie, between Bartow and Mulberry, by late Feb. 1953. It is one of the three which will recover uranium.

Virginia-Carolina Chemicals Co plans to start work within 60 days on a $15-million plant at Nichols, near Tampa, and the Davison Chemical Corp already has started a $10-million plant at Ridgewood. All three plants will recover uranium.

Victor Chemical Works has a big plant at Tarpon Springs, built in 1947 and expanded later to 10,000 tons annual capacity.

American Agricultural Chemical Co completed a new plant at Pierce in May. It has 5,000 tons annual capacity.

American Cyanamid has plants at Sydney and Brewster, and Arizone Chemicals Co., Inc., has recently completed a plant near Pensacola.

Procter and Gamble's subsidiary, Buckeye Cellulose Corp., is building a $21.5-million plant at Foley, and the Florida Petrochemical Corp. is ready to start construction on a $6-million plant at Port Everglades, 25 miles north of Miami.

Rayonier, Inc., which has a big plant at Fernandina, has announced a $3-million expansion which will increase capacity by 20,000 tons of pulp for tire cord and cellulose acetate a year.

Reichold Chemicals, Inc., entered Florida in June with purchase of the Reasor-Lewis Corp.'s naval stores plant in Jacksonville and establishment there of a new South Atlantic Division which will specialize in cellulose chemistry.

This company moved to Florida, said Pres. Henry H. Reichold, because the state leads in the production of turpentine and resin, making it a logical spot in which to carry on the firm's current research into terpene derivatives.

He said that when expansions are completed, Reichold would be able to supply resin adhesives and paper processing resins to the South's plywood, furniture and paper industries.

Chemical research may result in further expansion in Florida's phosphate industry.

• **Aluminum phosphate beds**—The Department of Interior announced in January that the U. S. Geological Survey had discovered large deposits of aluminum phosphate, offering a possible new source of aluminum, in Florida's land-pebble phosphate field.

The deposits occur in a widespread zone immediately above the commercial calcium phosphate deposits, from which they were derived by processes of leaching and alteration. More than 90% of the calcium phosphate in the underlying phosphate rock currently mined is used to make fertilizer, whereas the aluminum phosphate has been discarded with the overburden in the process of mining.

Completion of the Florida Petrochemical Plant at Port Everglades would lead to large-scale expansion of gas supplies for home heating and industrial uses in Central and South Florida.

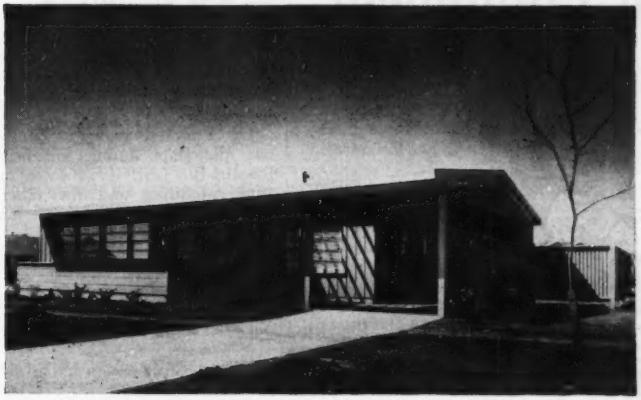
Half-owner of the corporation is Peoples Water & Gas Co., which Philip C. Crowen, New York utilities executive, acquired in 1950.

Crowen has spent some $3 million converting Peoples' big plant at Fulford, a Miami suburb, to production by the Ugite process.

Thermal efficiency of gas made by this process is about 80%.

The Port Everglades plant of Petrochemical would crack about 4,000 barrels of crude oil daily to provide Peoples with double its present capacity.

Crowen has plans ready for building pipelines northward to Palm Beach county, thence to Central Florida, tapping a vast area of industrial potential dependent now upon steam manufactured electricity.



DO TEXANS LIKE THEIR WEATHER HOT?—Fully air conditioned houses, like the $12,000 unit above, have not sold according to Dallas, Tex., builders' hopes. Generally soggy home market is blamed.

Cooled houses don't heat Texas market

Air conditioning has tried to enter—on a large scale—into the medium-low cost housing field this summer.

Site of the South's first big battle was Dallas, Tex., which swelters under 80 degrees or more an average of 130 days a year. Two large projects—one for 210 houses selling for $12,000 to $12,500 and another for 125 units selling in the $13,000 range—have been started. Air conditioning men predict there are more to follow.

Pilot homes for the 210-unit East Ridge Park project in Dallas' White Rock Lake section were opened last spring by the combined firms of Laughlin & Silver and Lewis & Lamberth. A big advertising spread financed by the builders and the air conditioning supplier drew 25,000 persons to the project on opening day.

The second development, located in the same section of Dallas, was opened in July by builders James Crow and John Benda.

General Electric Co., through Texas Distributors Inc., supplied two-ton cooling units for each house in the projects. Sales of the houses have been disappointing. E. P. Lamberth said that only 26 units had been sold two months after the opening, even though he had "expected to sell out overnight."

Lamberth blamed the sales lag on the soggy condition of the Dallas housing market. He contended that his units are moving as fast as any other Dallas homes in the $12,500 range.

"Regulation X is penalizing the progress of the development," he added. "The high down payments required for a $12,500 house have kept away many buyers and have wiped out several definite sales."

To overcome high down payment requirements of Regulation X, Lewis & Lamberth and Laughlin & Silver are building two-bedroom units to sell for less than $12,000. Builder John Benda's "Dallas Pacemaker" units have three bedrooms and a brick veneer face. Unlike the East Ridge Park units, Benda does not sell his houses under GI financing.

• **Other reasons**—Some Dallas builders and air conditioning dealers advance other reasons for the failure of the East Ridge Park units to sell as expected.

One air conditioning distributor said: "Fellow who buys a $12,500 home is not a wealthy man. It costs money to operate these air conditioners."

Another charged: "It's too big a step. People aren't convinced air conditioning is essential, even in Texas. Look how long it took for automobiles to become 'necessary'."

Benda disagreed. He said hundreds of Dallas home owners have installed attic fans, room coolers and evaporative coolers. He estimated that cooling costs would be $80 to $90 a year.

Up electronic output $396 million, DPA asks

The Defense Production Administration has set a goal of $396 million by 1954 of electronic manufacturing capacity.

Already, the government incentive fast-tax amortization certificates total $288 million of the expansion cost. So around $108 million will be promoted between now and 1954.

High on the list of expansion programs are special type radar antenna, hydrogen thratron tubes, transistors, reliable tubes, mica dies for mica separators, industrial television and specialized military end equipment.

Here are estimated costs of building plant, machinery and equipment for:

End item capacity	$216,500,000
Power tubes	56,800,000
Receiving tubes	70,500,000
Transformers & coils	8,000,000
Crystals and relays	24,500,000
Other components	19,850,000

Taking these items as a whole, the estimated additional expansion from March, 1952, through this year might run about $68,200,000. The estimated additional expansion for 1953 would run about $34,000,000.

Dollar cost for the expansion program was used rather than physical units because of the complexity of the electronic industry.

M-C&S shows six-month net earnings of $635,194

Consolidated net earnings of Merritt-Chapman & Scott Corp. for the first six months of 1952 totaled $635,194, after taxes, representing an increase of approximately seven percent over the similar period the year before. A regular quarterly dividend of 50 cents a share on the common stock was voted.

Six-month earnings of $635,194 this year were equal to $1.15 a share as compared with $593,718—equal to $1.06 a share—in the first half of 1951.

Gross revenues for the first six month of this year were reported as $21,863,038, exclusive of $14,717,518 in costs under cost-plus-fixed-fee construction contracts. Gross revenues for the same period in 1951 were $20,634,074, exclusive of $8,451,447 in costs under cost-plus-fixed-fee contracts.

As of June 30, 1952, the company had $95,302,789 in construction work ahead on its books, as against $83,734,006 the same time a year ago.

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The unique Crescent bottomless scraper digs effectively in any kind of loose material, handles heaping loads faster and requires less power per cubic yard handled than other types of scrapers.

Picture shows design of the 1/3, ½ and ¾ cu. yd. sizes of Crescents for handling heavy materials. There are twelve other sizes, made in five different models.

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Tennessee industry up $26.5 million

Nashville, Tenn.—Tennessee industry committed $26.5 million for expansion during the first half of 1952, the State Planning Commission has announced.

Of 68 projects announced throughout the state during the first six months this year, 40 were new industrial enterprises and the other 28 were enlargements of plants already in existence.

This compares with a total of 86 projects announced during the first half of 1951. Of these, 57 were new plants and 29 were expansions of existing plants.

• **This year's** new industry involves a total investment of nearly $12 million and the expansions represent more than $14.5 million. More than a third of the new plants involve investment of $25,000 or less.

It is estimated the new industrial operations and expansions will provide approximately 4,200 new jobs.

Among the larger new projects announced are: Koehring Southern Co., Chattanooga; J&J Corrugated Box Co., Elizabethton; Yale & Towne Manufacturing Co., Gallatin; Wamsutta Mills, Lawrenceburg; and Wilson Athletic Goods Manufacturing Co., Springfield.

Major expansions announced include: Aluminum Company of America, Alcoa; Chattanooga Implement & Manufacturing Co., Chattanooga; Combustion Engineering-Heater, Inc., Chattanooga; Seminole Flavor Co., Chattanooga; Foremost Dairies, Columbia; Ollie Coleman Brick Co., Knoxville; Kern's Bakery, Knoxville; Buckeye Cotton Oil Co., Memphis; Nat Buring Packing Co., Memphis; Quaker Oats Co., Memphis; and Swift & Co., Memphis.

• **The four largest** metropolitan centers were selected as location by 12 of the new plants—five in Nashville, three each in Memphis and Chattanooga, and one in Knoxville.

The five listed for Nashville are: Anderson-Hickey Co., light metal fabricators; Cesco-Lectrex Co., electronic equipment; Mada-Mae Apron Co.; General Multi-form Sales Co., printing; and Limestone Ready Mix Co., Inc.

Not included in the tally were the du Pont Co., which has purchased a site at New Johnsonville, and Firestone Tire & Rubber Co., which has bought a site at Lebanon.

Expansion moves briskly

Growth plans totaling $86.5-million for three industries, and plant expansion for the Atomic Energy Commission at an undisclosed cost-plus figure, were announced this week. Projects are:

• **Forging plant award**—An $11.5 million contract for construction of a new forging plant at Newark, Ohio has been awarded by the Kaiser Aluminum and Chemical Corp. to Darin and Armstrong, Inc. of Detroit.

The new plant will play an important role in the Air Force's $389-million program to mass produce large aircraft parts with huge forging and extrusion presses. Kaiser Aluminum will operate two giant forging presses at Newark and two extrusion presses at Halethrope, Md., for the Air Force. Construction, to start this month, is to be completed in 15 months.

• **Fertilizer plant**—Construction on a proposed $25-million fertilizer plant near La Platte, Neb. will get underway as soon as the Federal Power Commission okays a request of Northern Natural Gas Co. of Omaha to furnish natural gas as a raw material to the plant.

The proposed Allied Chemical and Dye Corp. plant would make hydrogen from the gas which Northern Natural wants to supply. Some gas would be used in other manufacturing but none would be used as boiler fuel, according to the company.

The plant's maximum daily requirement of gas was estimated at 12 million cu ft daily or 3.7 billion cu ft annually. At a minimum contract rate of 30 cents per 1,000 cu ft, Northern Natural estimated its annual revenue would be $1.1 million. Construction of about 7.9 miles of pipeline and other facilities, to cost $952,000, are proposed by the company.

• **Richfield Oil Corp.**—Plans to spend $40 million expanding its Watson refinery near Long Beach, Calif. Work is to begin immediately and is scheduled for completion during 1954.

Included in the project is construction of a new fluid catalytic cracking unit which the company says will have larger capacity than any similar unit on the West coast. Richfield's aviation gasoline production capacity will be increased almost three times to more than 500,000 gal a day. Total gasoline output will be increased by more than 40% to some 2,750,000 gal a day. Crude-oil processing capacity of the expanded plant will be more than 125,000 bbl a day.

Contracts let to date have been awarded to C. F. Braun of Alhambra, Calif. and Fluor Corp. of Los Angeles. Braun will build the catalytic cracker. Contract for a new polymerization plant has not yet been awarded.

• **Hanford expansion**—The Hanford, Wash. operations office of the Atomic Energy Commission has completed negotiations with Kaiser Engineers, division of Henry J. Kaiser Co., for construction of a large part of the new expansion program on the Hanford plutonium-producing project.

Contracts for designing the new plants have been signed with Vitro Corp. of America, New York City, and the Charles T. Main Co. of Boston. General Electric Co., operating contractors at Hanford, will furnish basic engineering designs and complete designs of complex features of the expansion.

Starting work in the late fall, Kaiser Engineers will hire a maximum construction force of 11,000 workers. Peak employment is expected to be reached late in 1953 or during the first half of 1954.

Kansas City voters pass $39-million bond program

An emergency $39-million bond and charter amendment program for Kansas City, Mo. was approved last week in an election held in conjunction with the Missouri primary.

Six bond proposals and three charter amendments were involved:

1—Authorizes the issuance of $9 million in self-liquidating general obligation bonds for the construction of sanitary sewers in unimproved areas of the city.

2—Authorizes the issuance of $13 million of self-liquidating general obligation bonds for the construction of street improvements in the unimproved areas.

3—Three million dollars of general obligation bonds for purchase of land and construction of runways and other facilities for a new super-industrial airport.

4—Authorizes $1.5 million in general obligation bonds to provide slum clearance in five blighted areas under the urban redevelopment program.

5—Issuance of $3.4 million in general obligation bonds for the construction of main trunk sewer lines in Kansas City, North.

6—Authorizes issuance of $20 million of self-liquidating revenue bonds to finance the construction of industrial facilities on the new airport.

Following approval of the bonds and amendments at the polls Tuesday, L. P. Cookingham, city manager of Kansas City, said the projects—especially the airport measures—will be started immediately. One issue in the bond program was whether Trans World Airlines would move its huge modification center from Kansas City.

Estimate and bid jibe; Army Engineers marvel

The Corps of Engineers in Sacramento, Calif., was surprised at the closeness of a low bid to the price the Corps had estimated the work could be done at a reasonable profit to the contractor.

The job is the construction of a frame aircraft shops building at the Travis Air Force Base near Fairfield, Calif.

The Del E. Webb Construction Co. of Phoenix, Ariz., offered to do the work for $67,270, which is only $1,503 more than the engineers' estimate.

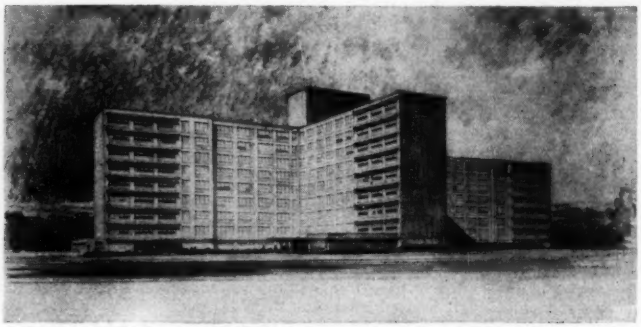
The second and third lowest bids were close, too. The MacDonald, Young & Nelson and Morrison Knudsen Co., bidding jointly from San Francisco, submitted a bid of $684,050.75, and Erbentraut & Summers of San Francisco turned in an offer of $687,589.40.

San Francisco receives underground garage bids

Three bids for building and operating San Francisco's long-delayed St. Mary's Square garage were submitted to the Parking Authority (Aug. 4), and the winning bidder will probably be announced within two weeks.

Although the city had hoped construction of the underground garage, which will cost in excess of $2 million, would be privately financed, one of the three bidders included a provision for possible assistance from the city.

First bid opened was submitted jointly by S. E. Onorato, Inc., San Francisco, and W. & B. Realty Co., Los Angeles. It proposes a lease of the site for 33 years with the city receiving 4% of the gross monthly receipts, but not less than $1,225 monthly. It would provide space for 933 cars.



NEW HOSPITAL STYLE—Designed for emergencies, this nine-story Army hospital, the larger of two sizes, can be doubled in bed capacity by adding wing at right.

Army to build expansible hospitals

Army Engineers hope to take bids for the first of seven expansible hospitals March 1, 1953. Congress recently appropriated funds for the seven buildings, first step in the Army's program to transfer patients from wooden, cantonment-type structures built during World War II to modern multi-story hospitals.

A first for the Army, the hospitals have been designed so that bed capacity can in some cases be doubled, during emergencies without addition of clinical and administrative facilities.

Each design includes an expansible chassis containing laboratories, offices, clinics and other space. Wings and wards can be added to the chassis without excessive difficulty or cost, and without functional disruption of operation of the hospital.

• **Hospitals in two sizes**—The seven hospitals will be built in two sizes, 500-bed, expansible to 1,000, and 250-bed expansible to 500.

Built with reinforced concrete frames the new installations will have all clinics, diagnostic and laboratory facilities and outpatient services centered on the ground floors. Wards for critically ill, operating rooms and clinics will be air-conditioned.

The uniform basic design for all seven hospitals was developed by York and Sawyer, of New York, in cooperation with the Defense Department and the Munitions Board. This firm has prepared definitive plans which can be adapted by other architects to fit site conditions and special requirements.

The basic design is in accord with unification policy to standardize plans for structures used by all three services.

Hospitals to be constructed at Fort Benning, Ga.; Fort Bragg, N. C.; Fort Knox, Ky.; and Fort Riley, Kansas, are for 500 beds on a 1,000-bed chassis. A new installation at Fort Belvoir, Va., will provide 250 beds initially, expansible to 500, while Fort Monmouth, N. J., will receive a 200-bed facility constructed on a 300-bed chassis. The largest structure will be erected at Fort Dix, N. J., and will furnish 750 beds, expansible.

All units are expectel to be completed in from two to three years.

Varied bond issues will face poll tests

Bond issues covering a variety of construction will be offered later this month and in the fall for approval of voters in Houston, Tex., Jacksonville, Fla., and the state of Oklahoma.

• **Houston**—A total of 13 bond issues totaling $18.4 million will face property owners Aug. 23. Biggest of the proposals is a $4.5 million city-county general hospital, for which $7.5 million already has been pledged. Other funds are sought for a municipal airport site, paving, fire stations, health centers, traffic signals, expressway rights-of-way and a bridge. County voters will be polled on their $4.5 share probably by year's end.

• **Jacksonville**—An $18 million bond issue for expansion of Jacksonville's municipal electrical system will be offered voters Oct. 7, if the proposal wins city council support. Added to the city's 152,000 kw capacity would be 88,000 kw. Work on the expansion of production and distribution facilities is scheduled to begin early next year with completion due in the winter of 1954.

• **Oklahoma**—Groundwork is being done in Oklahoma on a proposal to seek approval of the state's voters for a $102 million highway bond issue. Bonds would be retired by ear-marking state gasoline tax funds. Issues would be restricted to $40 million annually for three years.

The total allotment would be split, with $56,023,000 allocated for bridges and $46,399,000 for roads. The state highway department has estimated needs at $742 million.

Maine sells bonds for school buildings

In its first use of power granted in 1951 by the Maine Legislature to issue revenue bonds to finance new school buildings for lease to localities unable to handle their own financing, the Maine School Building Authority on July 30 sold a $681,000 bond issue to provide funds for school construction in 12 communities.

A syndicate of eight investment banking firms accepted an interest rate of 2.375% on a 20-yr series of $311,000 and 2.5% on a 25-yr series of $370,000.

Bond revenues will help build 62 classrooms, three general purpose rooms, a cafeteria and a gymnasium. Some communities will spend additional amounts from their own funds. The towns will repay the loans, interest and related charges in annual rentals, receiving title when the money is repaid.

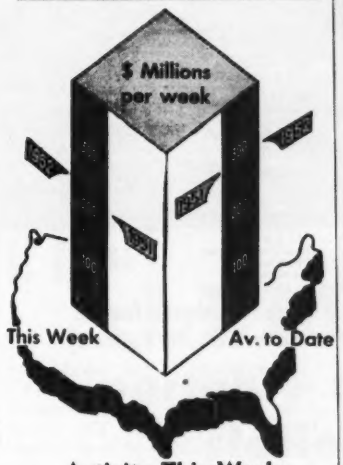
Business briefs . . .

• **Money flows, work proceeds**—The Bureau of Reclamation has received a $2-million appropriation to continue work on the final phase of a channelization project on the Rio Grande, north of Elephant Butte reservoir in New Mexico. Expected to salvage thousands of acre-feet of water, the 35-mi section will, New Mexico hopes, help the state repay part of its 400,000-acre-foot debt to Texas. The Supreme Court will be asked to decide whether or not New Mexico, under its agreement with Texas may store any water above the reservoir while its debt to Texas exceeds an allowable maximum.

• **Transplanting pay okayed**—Another obstacle to land acquisition for reservoir projects was minimized recently

by interpretation of congressional action to allow the Corps of Engineers to pay moving expenses of property owners uprooted by the corps' land acquisitions. Owners may recover moving expenses, not to exceed 25% of appraised value of their land.

• **New state building**—Construction of a $10-million state office building at Harrisburg has been authorized by the Pennsylvania General State Authority. Also authorized was a $1.25-million state warehouse and garage building group at Harrisburg. Projects will be financed through revenue bonds.



Activity This Week

As reported to ENR (in million of dollars)

Contracts by type of work

	This Week	Cumulative 33 wks 1952	1951	% chge
Waterworks	$3.4	$145.8	$139.9	+4
Sewerage	4.3	180.1	205.4	−12
Bridges	2.9	249.3	212.1	+18
Highways	28.2	996.7	751.7	+33
Earthwork, waterways	7.3	336.5	350.1	−4
Buildings:				
Public	97.1	2,298.4	1,503.4	+53
Housg., pub.	1.6	485.8	545.0	−11
Housg., priv.	22.6	1,922.3	1,245.5	+54
Commercial	9.8	393.9	442.1	−11
Industrial	40.5	1,724.5	2,749.4	−37
Unclassified	19.7	848.4	1,216.4	−30
Total	**$237.5**	**$9,583.8**	**$9,361.0**	**+2**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; Industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost.	Aug.	585.19	281.30	122.68
	July	570.65	274.31	119.63
Bldg. cost	Aug.	423.86	229.12	120.49
	July	414.46	224.04	117.81
Volume	July	904	367	261

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Ohio relocates State Route 16

A $2.4 million Ohio State Highway project will relocate State Route 16 from the east to the west side of the Muskingum River. The contract, 3.9 miles of four-lane divided pavement, is the first part of a stage development planned to bypass the city of Coshocton. Work includes grading, draining, and paving with reinforced portland cement concrete.

Three bridges are also part of the contract: (1) A concrete box culvert with two cells at 14-ft span by 7-ft high by 139.17-ft long over Copperas Run; (2) a continuous concrete slab bridge with concrete piers and capped-pile abutments with two 32-ft and two 40-ft spans, an interchange over Rt. 16; and (3) a continuous steel girder bridge with concrete deck and substructure, with two 78-ft and six 107-ft spans, over the Muskingum River. Both the concrete and steel bridges have 56-ft roadways with 4-ft medians and two 6-ft sidewalks. The Muskingum River bridge will eliminate three bridges from the state system.

T. J. Kauer is the Ohio Director of the Department of Highways; L. F. Schaeublin, assistant director and chief engineer.

The project must be complete by December 31, 1953. Bidders include:

1C	V. N. Helderman & Sons Inc., Columbus, Ohio	$2,401,800
2	Baker & Hickey Co., Columbus, Ohio	2,464,725
5	C. F. Replogle, Circleville, Ohio	2,524,153

Bids: 6-17-52

Roadway

Items	Unit	Quantity	Unit Prices 1 C	2
Exc, roadway	cy	169,403	$0.57	$0.70
Borrow	cy	386,992	0.68	0.80
Remove & dispose of				
existing pavement	sy	7,211	0.75	0.95
existing sidewalk	sf	4,585	0.15	0.10
pipe, 15" and under	lf	1,593	0.75	0.50
pipe, over 15"	lf	43	1.50	0.60
existing guard rail	lf	1,597	0.40	0.40
Remove trees and stumps	ls	1	$29,500	$27,000
Water	M gal	2,872	$3.00	$3.00
Concrete sidewalk, 4"	sf	14,119	0.43	0.45
Concrete steps	lf	90	5.00	4.00
Grd rail, stl beam, deep	lf	12,300	2.20	2.20
Side approaches & mail box turnouts material	cy	230	2.60	3.00
Berm material	cy	2,911	3.75	3.25
Traffic compact surf crse*	cy	725	3.00	2.50
Calcium chloride*	t	29	65.00	60.00
Classified embankment material grading C or D	cy	18,029	1.95	2.00
Temp run-around roads	ls	1	$3,150	$3,000
Seeding & protect, typ A	sy	262,251	$0.09	$0.08
Commercial fertilizer	t	24	115.00	100.00
Agricultural grd limestone	t	118	17.50	25.00
Sodding	sy	5,146	0.65	0.90
Jap barberry, 24" to 30"	ea	245	2.50	4.50

* For maintaining traffic.

Drainage

Items	Unit	Quantity	Unit Prices 1 C	2
Plain C M pipe, M-8.4				
for driveways, 12"	lf	162	$3.00	$2.75
15"	lf	64	3.50	3.25
48"	lf	44	14.25	15.00
for underdrains, 8"	lf	58	3.50	3.00
Plain SSCC pipe, M-8.5 for storm sewers, 10"	lf	100	2.90	2.50
12"	lf	2,670	4.50	3.25
SSRCC pipe, M-8.6, 24" for storm sewers	lf	120	7.10	6.50
Paved invert CM pipe, M-8.4, 12" outlet for SS	lf	373	4.40	4.50
Ex qual dr tile, M-8.7				
3" roadway drainage	lf	74	3.00	1.50
4"	lf	100	3.00	1.60
6"	lf	100	4.00	1.80
8"	lf	100	5.00	2.00
6" for pipe underdrains	lf	1,218	1.11	1.20
Pipe special for SS, 12"	ea	1	22.00	20.00
24"	ea	1	60.00	50.00
3" for rdway drainage	ea	1	10.00	3.00
6" for underdrains	ea	5	9.00	4.00
8" outlet pipe for undr	ea	1	10.00	20.00
12" outlet pipe for SS	ea	14	24.00	15.00
Pipe special CI flap gate				
15"	ea	1	75.00	50.00
18"	ea	1	95.00	75.00
24"	ea	1	125.00	100.00
30"	ea	1	185.00	150.00
Catch basin, std #1-2-A	ea	1	122.00	150.00
#2-2-A	ea	6	125.00	130.00
#1-3	ea	1	175.00	160.00
#2-3	ea	5	165.00	170.00
#2-4	ea	1	220.00	190.00
#3	ea	18	350.00	400.00
#3-A	ea	5	250.00	250.00
#7	ea	1	90.00	90.00
Spec raised curb inlets	ea	30	325.00	250.00
Outlet basins	ea	12	75.00	200.00
Stnd #1 manholes	ea	2	375.00	300.00
Riprap, type A grouted	sy	211	9.50	8.00
Dumped rock fill	cy	37	7.00	4.00
Paved gutter, type 1	lf	275	4.25	3.50
type A	lf	1,271	5.10	4.25
type B	lf	48	7.50	4.50
Catch basins abandoned	ea	12	25.00	25.00
Exc, for structures	cy	3,152	3.25	4.25
channel	cy	2,343	1.75	1.20
Conc for struct, cls E	cy	134	60.00	75.00
Reinforcing steel	lb	9	1.00	0.12
Pipe railing, 1½"	lf	41	5.00	5.00
Remove part exist struct	ls	1	500.00	100.00
Dowel holes	lf	3	3.00	2.00
Remove exist struct	ls	1	1,000.00	300.00
SSRCC pipe, M-8.6				
15" for roadway culv	lf	581	4.65	4.50
18"	lf	32	5.30	5.00
21"	lf	104	6.50	6.25
24"	lf	617	7.35	6.90
27"	lf	123	9.00	7.50
30"	lf	386	10.00	9.25
33"	lf	116	11.50	10.50
36"	lf	248	13.50	12.50
48"	lf	296	21.00	19.00
84"	lf	252	50.00	42.50
Paved bit ctd CM pipe, M-8.4				
for rdway culv, 15"	lf	102	4.70	4.25
18"	lf	68	5.50	5.00
24"	lf	112	8.00	7.50
30"	lf	32	10.00	8.75

Pavement

Items	Unit	Quantity	Unit Prices 1 C	2
Asph conc level crse 70-80 or 85-100	cy	20	$30.00	$20.00
Bit tack coat, M-5.5, MS-2 or SS-1	gal	59	0.40	0.50
Asph conc surf crse, typ A or C, 70-80 or 85-100	cy	37	30.00	20.00
P cmt conc pavement, 7"	sy	172	5.00	5.00
9"	sy	3,004	4.70	4.72
9" reinforced	sy	97,120	4.70	4.72
Reinf conc app slabs	cy	380	10.00	11.00
Comb curb & gutter, standard type 2	lf	1,530	2.75	2.75
Concrete curb, type 2-A	lf	36,056	0.50	0.60
type 4-A	lf	201	0.75	0.75
type 6	lf	51	1.50	3.00
P cmt conc med pave, spec	sy	420	10.00	10.00
type A	sy	43	11.00	10.00
type B	sy	8	12.00	10.00
Precast conc traffi div	ea	34	10.00	10.00

Bridge over Route 16

Items	Unit	Quantity	Unit Prices 1 C	2
Exc, unclassified	cy	216	3.50	3.00
Conc, class C, superstruct	cy	670	56.50	70.00
abutments	cy	76	45.00	60.00
pier caps & columns	cy	97	65.00	90.00
pier footings	cy	76	42.00	50.00
Waterproofing, type C	sy	857	0.70	0.80
Reinforcing steel	lb	208,015	0.11	0.12
Premolded exp jt fil, ¼"	sf	54	1.50	0.30
Railing, stl, conc posts	lf	295	16.35	14.00
First test pile	ls	1	850.00	750.00
Reinf conc piling, 12"	lf	2,690	5.45	5.00
Electric conduit, 3"	lf	296	1.10	0.60
Subdrain, wear surf crse	lf	291	1.30	0.75
Asph conc surf crse—A or C	cy	59	30.00	22.50

Bridge over Michigan River

Items	Unit	Quantity	Unit Prices 1 C	2
Cofferdams, cribs & sheet	ls	1	$81,000	$129,000
Exc, unclassified	cy	3,410	$3.50	$3.00
channel	cy	9,723	1.50	1.50
Conc, cls C, superstruct	cy	1,560	60.00	60.00
cls E, abutments	cy	176	50.00	60.00
cls E, pier walls	cy	2,213	53.50	52.00
cls E, pier footings	cy	870	40.00	48.00
Waterproofing, type C	sy	4,700	0.60	0.80
Reinforcing steel	lb	468,820	0.11	0.12
Structural steel	lb	2,528,000	0.192	0.165
Field paint str stl	lb	2,528,000	0.0075	0.006
Railing, steel	lf	1,598	13.60	12.00
First test pile	ls	1	$1,000	$1,000
Pile test load	ls	1	2,000	1,500
Subsequent test load	ls	1	1,500	800
Reinf conc piling, 12" cast-in-place	lf	16,690	$5.25	$5.25
Remove exist struct	ls	1	$15,000	$20,000
Bridge light system stnd, pull boxes	ea	1	2,650	2,000
Electric cond, 3" fiber incl. fittings	lf	1,600	$0.50	$0.50
1½" flexible, fttgs	lf	42	6.25	1.00
Subdrain, wear surf crse	lf	1,594	1.20	0.75
Riprap, type A	sy	178	10.00	10.00
Concrete gutter	lf	200	7.00	6.00
Asph conc surf course type A or C 70-80 or 85-100	cy	321	25.00	22.50

Bridge over Copperas Run

Items	Unit	Quantity	Unit Prices 1 C	2
Cofferdams, cribs & sheeting	ls	1	$600.00	$5,000
Exc, unclassified	cy	335	3.50	$3.00
channel	cy	1,481	1.00	1.20
Concrete, cls C	cy	538	48.00	60.00
cls E, wng walls	cy	25	58.00	80.00
cls E, wing footings	cy	31	58.00	40.00
Waterproofing, premoulded sealing strip	lf	38	6.00	5.00
Reinforcing steel	lb	82,610	0.11	0.12
Premolded exp jt fil, 1"	sf	69	1.00	0.80
Porous backfill	cy	11	6.00	5.00

Lighting system

Items	Unit	Quantity	Unit Prices 1 C	2
Light standards, 15' B	ea	23	$217.00	$214.00
10' B	ea	17	212.00	205.00
15' B & 8' B	ea	5	237.00	245.00
Conduit conc encased	lf	1,550	1.60	1.20
Trench for cable	lf	7,430	0.80	1.00
Pull boxes	ea	2	80.00	80.00

Three viaducts for South Dakota highway

Heavy traffic, 2,050 vehicles per day, necessitated the relocation of 4.5 miles of U.S. Rt. 77 in Minnehaha County, South Dakota. This project requires the building of three bridges: A 50-ft composite I beam viaduct, a 428-ft and a 308-ft I beam viaduct—all with 30-ft roadways. Grading and concrete paving contracts will be let at a later date.

Cement from the state owned Rapid City plant will be used. Crushed rock is available at Dell Rapids and sand at Sioux Falls.

H. C. Rempfer is the South Dakota highway engineer; Thor Soleglad, assistant.

Bidders include:

1C	Bonesteel & Hyde Inc., Rapid City, S. D.	$229,957
2	C. A. Wagner Const. Co., Sioux Falls, S. D.	246,465
5	Graves Bros. Co., Melvin, Iowa	271,900

Bids: 2-15-52

Items	Unit	Quantity	Unit Prices 1 C	2
Clearing trees, 6" to 18"	ea	58	95.00	$3.00
over 18"	ea	11	6.00	20.00
Clearing, unclass	ls	1	100.00	100.00
Grubbing stumps 6" to 18"	ea	67	5.00	4.00
over 18"	ea	11	8.00	20.00
Exc, unclass	cy	9,880	0.70	1.00
for structures	cy	1,070	10.00	15.00
Overhaul of exc	cy	49,400	0.02	0.02
Water for compaction	M gal	20	5.00	2.00
Conc, cls A, state cmt	cy	1,304	55.00	55.00
other cmt—alternate	cy	1,304	55.00	55.00
Mortar rubble mas wall	cy	571	25.00	50.00
Reinforcing steel	lb	197,655	0.15	0.125
Structural steel	lb	550,085	0.15	0.137
Railing	lf	1,613	6.00	10.00
Maintain traffic at bridge	ls	1	600.00	500.00
Incidental work	ls	1	750.00	500.00

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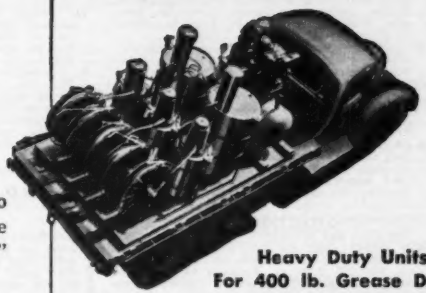

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.
ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—BUILDINGS

Conn., Meriden—SCHOOL ADDN.—B.A. 8/20—City, Bd. Educ., 2 story, brick, steel, cinder block, John Barry School addn., Lewis Ave. Plans deposit $50. CD 12/4/51.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

McKie Lighter Co., 470 Atlantic Ave., Boston, Mass. LB $407,551. est. $400,000. Contr. No. 7, dredging, filling, demolition at site of Commonwealth Pier No. 1 and Boston & Albany Pier No. 2, East Boston, BOSTON, MASS. Port Boston Auth., Commonwealth Pier No. 5, South Boston, Mass. Bids July 28. CD 7/16.

▲ **Industrial Constr. Co.**, 120 Prospect Ave., Hartford, Conn., LB, $2,500,000, TELEPHONE BLDG. ADDN. Trumbull & Jewett Sts., HARTFORD, CONN. Southern N. E. Telephone Co., 227 Church St., New Haven, Conn. CD 8/5.

BUILDINGS
LOW BIDS AND CONTRACTS

McCutcheon Co., 250 Stuart St., Boston, Mass. CA $975,000. est. $1,000,000. Young Women RESIDENCE addn., alterations, Berkeley and Appleton Sts., BOSTON, MASS. Boston Young Women's Christian Assn., 140 Clarendon St., Boston, Mass. CD 5/27 under LB.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

Del., Georgetown—SCHOOL ADDN.—B.A. 8/20—Georgetown Special School Dist., elementary school addn., boiler plant alterations, electric distr. sys. $792,792. Lewis H. Doane Penna. R. R. Bldg., Wilmington, engr. Stanhope & Manning, 902 Orange St., Wilmington, archts. CD 5/15.

N. J., Trenton—APARTMENT DEVELOPMENT—B.A. 8/21—Realty Corp. of America, 146 W. Hanover St., Trenton, apartment development, Walter Ave., $460,000. L. R. N. Smythe, 11 W. Front St., Trenton, N. J., archt.

N. Y., Valley Stream—SCHOOL—B.A. 8/26—Bd. Educ., Union Free School Dist. 30, Clearstream Ave., School, Valley Stream, grade school, $627,500.

Pa., Albion—SCHOOL—B.A. About 8/26—Joint School Dist. of Conneaut and Elk Creek Twp., 2 story, 240x320 ft., brick Junior Senior High School. $900,000. Freeburg & Lindquist, Jamestown, N. Y., archts. CD 11/14/49.

▲ **Pa., McKees Rocks**—HOUSING—B.A. 8/28—Allegheny County Housing Auth., County Office, Pittsburgh, 100 housing units, Housing Proj. 609. $1,000,000. Plans deposit $80. Alexander Sharove, Bowers & Barbalat, 534 Bakewell Bldg., Pittsburgh, archts. CD 9/12/50.

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

NEW JERSEY—State Hy. Dpt., Trenton,

Nesto Constr. Co., 100 Riverside Ave., Newark, N. J., LB, $461,052, 0.707 mi. Bloomfield Ave. from Third Ave. to Chester Ave., Newark and Bloomfield, Essex Co. Bids July 29. CD 7/10.

▲ **Reid Contg. Co.**, P. O. Box 185, Woodbridge, N. J., CA $1,714,496, L. T. A. mat enlargement and runway extens lighting system and generator bldg., NOY 70174, Spec. 3180 LAKEHURST, N. J. Dpt. Navy, Phila. Naval Base, Phila., Pa. Bids July 30.

PENNSYLVANIA—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

W. L. Dunn Constr. Co., Cochranton, Pa. CA. $529,888. constr. 39,770 ft. crushed aggregate base road with bit. surf. 20 ft. wide, widen, and overlay of existing pavement, L.R. 22018 (1-R), 20019 (1-R), 20011 (1-R), Crawford Co. Bids July 18. Awarded Aug. 4. CD 7/22, under LB.

† **American Dredging Co.**, 12 S. 12 St., Phila., Pa. CA. $564,687. dredging Delaware River from mouth of Frankford Creek up to Newbold Island, N. J., PENNSYLVANIA AND NEW JERSEY. U. S. Eng., 121 N. Broad St., Phila., Pa. CD 7/9, under LB.

BUILDINGS
LOW BIDS AND CONTRACTS

▲ **Paul J. Roche Constr. Co., Inc.**, 712 Newbridge Rd., Bellmore, N. Y., CA. general contract;

Arc Electric Constr. Co., 739 Second Ave., New York, 16, N. Y., CA. electrical work;

Courter & Co., Inc., 317 W. 13 St., New York, 14, N. Y., CA. heating and ventilating.

John Boyd Plumbing & Heating Co., 109 Broad St., New York, N. Y., CA. plumbing and sanitary; Total Est. Approx. $2,300,000, SCHOOL, LEVITTOWN, N. Y. Bd. Educ., Union Free School Dist. 5, Levittown, N. Y. Frederick P. Wiedersum, 240 Rockaway Blvd., Valley Stream, N. Y., archt. Bids July 18. CD 7/10.

Frank W. Bogert 324 Railroad Ave., Hackensack, CA, $784,674, general contract, Beech St. SCHOOL, HACKENSACK, N. J. Bd. Educ., 355 State St., Hackensack, N. J. Bids July 21. CD 7/9.

Pen-Del Builders, 612 Sharp Ave., Glenolden, Pa. Separate Contracts. $500,000. RESIDENTIAL DEVELOPMENT Pusey Ave., COLLINGDALE, PA.

▲ **Fleming & Co.**, 1717 Sansom St., Phila., Pa. CA. $1,000,000. SHOPPING CENTER Manoa Sect., HAVERTOWN, PA. Manoa Shopping Center, 820 Lewis Tower Bldg., Phila., Pa. Bids May 26. CD 5/22.

Baltimore Markets, 2301 Market St., Phila., Pa. Separate Contracts. $500,000. SUPER MARKET, MILLBOURNE, PA. Joseph Margolis, 2206 St. James St., Phila., Pa., archt. CD 4/25.

▲ **Sunnybrook, Inc.**, 2826 Mt. Carmel St., North Hills, Pa. Separate Contract. est. $1,250,000. RESIDENTIAL DEVELOPMENT Oreland Gardens, North Hills and Moreland Ave.; RESIDENTIAL DEVELOPMENT Burton and Surrey Aves., ORELAND, PA. George Daub, 2123 Delancey St. and G. Harold Murphy, 1621 Sellers St., Phila., Pa., archts.

▲ **Felix Clauss & Sons**, 4400 D St., Phila., Pa. Separate Contracts. est. $2,100,000. RESIDENTIAL DEVELOPMENT Byberry Rd., PHILA., PA.

▲ **Roy V. E. Williams**, Huntingdon, Pa. Separate Contracts. est. $1,250,000. RESIDENTIAL DEVELOPMENT various roads SECONE, PA. Harold E. Williams, 2112 Walnut St., Phila., Pa., archt.

▲† **John McShain, Inc.**, 1501 Arlington Ridge Rd., Arlington, Va. CA. 3 BUILDINGS, FORT RITCHIE, MD. U. S. Eng., First & Douglas Sts. N. W., Wash. 25, D. C. Bids July 8. CD 6/9.

Cafritz Constr. Co., 1404 K St. N.W. Wash., D. C. CA. $800,000, 20 three story, brick, cinder block APARTMENTS, 12 units each, Mississipi Ave., Stanton Road and 18 St. S.E., WASH., D. C. Parklands, Inc., 1404 K St. N.W., Wash., D. C. L. L. Werner, 1404 K St., N.W., Wash., D. C., archt.

SOUTH

BIDS ASKED—BUILDINGS

Va., Newport News—DIAL EQUIPMENT BLDG.—B.A. 8/19—At office Baskerville & Son, engrs., 2313 W. Cary St., Richmond, dial equipment bldg. for Newport News and Warick County for the Chesapeake & Potomac Telephone Co. of Va., Newport News, Va.

N. C., Jacksonville—SCHOOL—B.A. 8/26—Onslow Co. Bd. Educ., Jacksonville, New River Elementary School. Approx. $400,000. Plans deposit $50. Leslie N. Boney, Wilmington, N. C., archt. CD 5/28.

Va., Clintwood—SCHOOL—B.A. 8/26—Dickenson Co., Bd. Educ., Hayst School, Frantz & Addkison, State and City Office Bdg., Roanoke, archts. CD 11/14/50.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction
(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

HEAVY CONSTRUCTION
LOW BIDS AND CONTRACTS

▲† **Virginia Engineering Co., Inc.**, 80 29 St., Newport News, Va. CA, $2,100,000, aircraft maintenance hangar, Naval Air Station, NOY 71309, OCEANA, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. CD 7/29 under LB.

▲† **Tidewater Constr. Co.**, 738 Front St., Norfolk, Va. LB, $1,283,000 aviation gasoline and jet fuel storage, U. S. Naval Supply Center, Cheatham Annex, NOY 70223, WILLIAMSBURG, VA. Dpt. Navy, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids Aug. 11. CD 7/24.

▲† **Wise Contg. Co.**, Eight and Grace Sts., Richmond, Va. LB, $1,139,800 replacement and enlargement of fuel pier, U. S. Naval Supply Center, NOY 73594, YORKTOWN, VA. Dpt. Navy, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids Aug. 5. CD 7/9.

† **Sloan Constr. Co.**, People's National Bank Bldg., Greenville, S. C. LB, $236,856 roads, parking areas, R. R. spur, Charleston Air Field, Eng. 38-081-52-95, CHARLESTON, S. C. U. S. Eng., Custom House, Charleston, S. C. CD 6/24.

▲**TENNESSEE**—State Hy. Dpt., Nashville,

Marion Constr. Co., Craighead Ave., Nashville, Tenn. CA $547,155. Crushed stone surf. 8.585 mi. sect. State Rte. No. 26, Proj. No. F 026-1-(9), DeKalb Co.

Forcum-James Co., Dyersburg, Tenn. CA $514,320, grav. or chert surf. constr. 5 bridges 15.3 mi. sect. State Rte. No. 77, Proj. No. SAP 964-A, Dyer and Gibson Counties.

J. B. Michael & Co., 1021 Heywood St., Memphis, Tenn. and **Forcum-James Co.**, Dyersburg, Tenn. CA $540,984. Bit materials widen, resurf. 10.414 mi. sect. State Rte. No. 3, Proj. No. SAP 958-A, Tipton Co. Grand total $1,602,459. CD 8/1, under LB.

▲† **Dougherty-Liddell Constr. Co.**, 1360 E. McLemre Ave., Memphis, Tenn. LB $1,357,000. Addnl. facilities at Naval Air Technical Training Center, NOY 72909, MEMPHIS, TENN. U. S. Navy, Officer in Charge of Constr., Box 365, Naval Base, Charleston, S. C. Bids Aug. 5. CD 7/17.

BUILDINGS
LOW BIDS AND CONTRACTS

Carl L. Beard & Julian E. Johnson, Thomaston Rd., Macon, Ga., Owner Builds, $750,000, 75 RESIDENCES, MACON, GA.

Shurling & Co., Wrightsville, Ga., Owner Builds, $500,000, RESIDENCES, MACON, GA.

▲ **B. E. Roebuck, Inc.**, College Park, Ga., Owner Builds, Approx. $1,000,000, 200 RESIDENCES, WARNER ROBINS, GA.

▲ **Robert L. Turchin, Inc.**, 1835 Purdy Ave., Miami Beach, Fla., CA. $1,000,000, 6 story, 120x270 ft., HOTEL, MIAMI BEACH, FLA. International Co., Inc., 6400 Pinetree Dr., Miami Beach, Fla. Melvin Grossman, 311 Lincoln Rd., Miami Beach, Fla., archt.

▲† **ALABAMA-KENTUCKY-TENNESSEE**—Tennessee Valley Authority, Sprakles Bldg., Knoxville, Tenn., awarded contracts for Colbert Steam Plant, Pickwick Reservoir, Ala., Shawnee Steam Plant, Ky., and Kingston Steam Plant, Tenn. Total $63,297,821.

General Electric Co., River Rd., Schenectady, N. Y. 4 turbogenerators, transformers, reactors, oil breakers.

Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pa., transformers, switchboards, oil circuit breakers.

Babcock & Wilcox, Barberton, O. 6 boilers at Colbert and Shawnee Plants.

Combustion Engineering-Superheater, Inc., 208 Madison Ave., New York, 16, N. Y. 2 boilers for Kingston Plant.

Byron Jackson Co., Vernon Blvd. at Thomas St., Los Angeles 54, Calif., boiler feed pumps.

Foster Wheeler Corp., 165 Broadway, New York, N. Y., condensers.

American Blower Corp., Tireman Ave. at Roselawn St., Detroit 32, Mich., draft fans and fly ash collectors.

Sturtevant Div., Westinghouse Electric Corp., 37 Readville St., Hyde Park, Boston 36, Mass., forced and induced draft fans.

Worthington Corp., 426 Worthington Ave., Harrison, N. J., condenser circulating water pumps and deaerating feedwater heaters.

American Locomotive Co., Dunkirk, N. Y., feedwater heaters.

Allis-Chalmers Mfg. Co., 864 S. 70 St., Milwaukee, Wis., transformers and reactors.

I-T-E-Circuit Breaker Co., 1900 Hamilton St., Phila. 30, Pa., switchboards.

Ingersoll-Rand Co., 11 Broadway, N. Y. 4, N. Y. boiler feed pumps.

Buell Engineering Co., Inc., 70 Pine St., New York, N. Y., fly ash collectors.

Lummus Co., 385 Madison Ave., New York, N. Y., heaters.

United Conveyor Co., 37 W. Van Buren St., Chicago 5, Ill., ash and dust handling equipment.

American Bridge Co., Frick Bldg., Pittsburgh, Pa., structural steel.

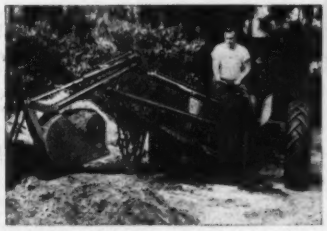
Custodis Constr. Co., 25 Broadway, New York, N. Y., concrete chimneys.

DIGGING COSTS REDUCED!

The Sherman Power Digger has proved itself a champion cost-cutter on thousands of jobs where digging costs were formerly too high.

Wherever restrictions on weight and clearances make a job hard to get to, where rugged performance is a must, the Sherman Power Digger fills the bill on operations both large and small.

Back-hoe shovels retain their load up to 7 feet, to clear truck bed. The speed and efficiency of this popular digger is apparent once you see it at work.



Fast, efficient work is possible in cramped working areas. The Sherman Power Digger can even be used inside buildings. Only 7'6" overhead clearance is required.

Digs through asphalt and macadam—works well in hardpan clay, gravel, shale and stony ground. Easily operated with four simple hand controls.

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Mounted on a rubber-tired Ford or Ferguson Tractor with Sherman auxiliary transmission providing 12 forward, 3 reverse and 3 power take-off speeds. Length only 13' 4"; height, 10' 3"; width, 5' 6". From one position will reach to dig 10 feet behind tractor in 140° arc and to depth of 8 feet.

For complete information and name of nearest distributor who can show you the money-saving Sherman Power Digger in action, WRITE TODAY to Sherman Products, Inc., Dept. C, 3200 W. Fourteen Mile Road, Royal Oak, Michigan.

Sherman PRODUCTS, INC.

Patent No. 2,303,825. Other patents pending

FARM AND INDUSTRIAL EQUIPMENT MANUFACTURERS

Designed, Engineered and Manufactured Jointly By **SHERMAN PRODUCTS, INC., Royal Oak, Michigan • WAIN-ROY CORP., Hubbardston, Mass.**

MIDDLE WEST

BIDS ASKED—BUILDINGS

† **Ind., Indianapolis** — HOSPITAL — B.A. 8/26 — Veterans Admin., Vermont Ave. between H & I Sts. N. W., Wash., D. C., Buildings NO. 1, 7 and 11 alterations, and Buildings No. 1 and 2 addns., incl. roadwork, grading, plumbing equipment, heating, ventilating, electrical work, etc. Veterans Administration Hospital, Cold Spring Road.

Wis., Superior—HOUSING—B.A. 8/27—Housing Auth. of Superior, 200-unit, frame housing project. H. Hansen, 1225 Tower Ave., and M. R. Dobberman, 304 Board of Trade Bldg., Superior, archts.

Mich., Lincoln Park—SCHOOL—B.A. 8/28—City, Bd. Educ., 2 story, bsmnt., rein.-con., brick high school, $350,000. Plans deposit $20 refundable. Carlton F. Campbell, 2903 Biddle St., Wyandotte, archt. CD 7/21.

Ill., Waterman—SCHOOL—B.A. About 9/15—Bd. Educ., D. E. Stitzel, supt. of schools, elementary school $300,000. Leroy Thompson, 355 Congdon Ave., Elgin, Ill., archt. CD 5/28.

Mich., Dearborn—OPEN HEARTH BLDG—Bids Asked—Ford Motor Co., Rouge Plant, 3000 Schaefer St., brick, steel, 100 ft. long open hearth bldg. addn., Schaefer St., $500,000. Leo M. Bauer, 534 Free Press Bldg., Detroit, archt. CD 6/7/46.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

ILLINOIS—State Div. Hys., Springfield, Ill.

Leiniger Constr. Co., 30 N. La Salle St., Chicago 2, Ill., CA, $797,562, grading for dual pavement and c. conc. 4.48 mi. F.A. 122, Will and Cook Counties. Bids July 18, awarded Aug. 5. CD 7/22, under LB.

Standard Paving Co., 30 N. La Salle St., Chicago 2, Ill., LB, $155,488, resurf. N. Damen Ave. from Belmont Ave. to Irving Park Road;

Allied Asphalt Paving Co., 13912 S. Ashland St., Chicago 28, Ill., LB, $162,671, resurf. Grand Ave. from W. Fullerton to W. Le Claire Ave.;

Crowley-Sheppard Co., 1412 Altgeld Ave., Chicago 14, Ill., LB, $181,569, resurf. W. 74 St. and E. 75 St. S. Ashland Ave. to S. Cottage Grove Ave.;

Rock Road Constr. Co., 5915 Rogers Ave., Chicago 26, Ill., LB, $225,870 resurf. E. 75 St. from S. Cottage Grove, to South Shore Dr.;

Chatham Paving Co., 8458 S. State St., Chicago 20, Ill., LB, $232,422, paving Cortland St. and Racine Ave. from Ashland to Armitage St.;

Municipal Paving Co., 5757 Ogden Ave., Cicero, Ill., LB $183,443, resurf. Vincennes Rd. from 95 St. to 107 St., CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids July 30.

Normoyle & Berg, 1016 17 Ave., Rock Island, Ill. ,LB, $400,00; sewage treatment works and sanitary sewer lines, MILAN, ILL. City, City Hall, Milan, Ill. Bids July 31. CD 7/24.

▲ **MICHIGAN**—State Hy. Dept., 222 Townsend St., Lansing, Zone 13.

F. C. Atteteed, 4353 W. Warren St., Detroit, Mich. LB $854,839. est. $950,000. 2 concrete and steel bridges. 1 complete and 1 partial John C. Lodge G. Lodge and Edsel Ford Expressways interchange, UI B 18; of 82-22-12 C1, UI B 19 of 82-22-12 C2 (UI 404 46), Wayne Co.; LB $797,179. est. $900,000. grade separation over Edsel Ford Expressway near 12 St., 3 built up steel girder bridges, 2 rlfd beam driveway bridges, UI X10 of 82-22-10 C1 (UI 391 46), Wayne Co.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Darin & Armstrong, Inc.,** 2041 Fenkel St., Detroit, Mich. CA $11,555,000. Heavy PRESS PLANT, auxiliary bldgs., press foundations and installing machinery for forging aircraft parts, NEWARK, O.

E. W. Bliss Co., 1381 Raff Rd. S.W., Canton, O. will build presses. Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland, Calif. will operate plant for Department of Air Force.

Superior Constr. Co., 1800 E. 7 St., Gary, Ind., CA, $950,000, operating HEADQUARTERS on 167 St., HAMMOND, IND. Northern Indiana Public Service Corp., 5265 Hohman Ave., Hammond, Ind. Bids July 16, awarded July 28. CD 6/26.

Poirot Constr. Co., 2001 Pershing Rd., Chicago 5, Ill., CA, $400,000 2 story ENGINEERING BLDG. AEDN., HAMMOND, IND. Standard Oil Co. of Indiana, 910 S. Michigan St., Chicago 5, Ill. Awarded July 28. CD 7/3.

August B. Johnson Co., Flint, Mich. CA $543,987. general contract. 1 and 2 story, 115x135 ft., brick, cinder block, Wm. S. Ballenger FIELD HOUSE-GYMNASIUM, Oak Grove Campus, FLINT, MICH. Flint Junior College, J. Fred Totten, pres., Flint, Mich. CD 7/31 under LB.

Barnes Constr. Co., 1310 Wallen St. S. W., Grand Rapids, Mich. LB $515,500. 2 story, bsmnt., brick, concrete elementary SCHOOL, Bullock Park, GRAND RAPIDS, MICH. City, Bd. Educ., 143 Bostwick St. N. E., Grand Rapids, Mich. Bids July 23. CD 7/16.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Nebraska—TRANSMISSION LINES—B.A. 8/21—North Central Nebraska Rural Pub. Power Dist., Creighton, 28 mi. transmission lines, $100,000, Raymond H. Reed & Co., Columbus, engrs. CD 11/21/51.

† **Neb., Fort Crook**—GLOBAL COMMUNICATION FACILITIES—B.A. 8/22—U. S. Eng., 1709 Jackson St., Omaha, completion of global communication facilities, near Elkhorn, Mead and Offutt Air Force Base, Inv. 25-066-53-32. CD 7/31 under LB.

Tex., Fort Worth—B.A. 9/12—Tarrant County Water Control & Imprv. Dist. No. 1, c/o J. B. Hoggsett, pres., Danciger Bldg., steel, rein.-con. bridge across Trinity River at northeast 12 St., $428,000. Plans deposit $25, Freese & Nichols, 407 Danciger Bldg., engrs. CD 12/18/51.

BIDS ASKED—BUILDINGS

Kan., Udall—SCHOOL—B.A. 8/19—High School Dist. No. 7, Cowley Co., Winfield, high school, $300,000, R. L. Hollis, 1206 E. Waterman St., Wichita, archt. CD 12/5/51.

Tex., Houston—OFFICE—B.A. 8/21—Harris County Ship Channel Dist., Port Comn., Box 9187, 2 story, office, Texas and Crawford Sts., $500,000. Alfred C. Finn, Bankers Mortgage Bldg., archt. CD 2/13.

S. D., Sioux Falls—PLANT—B.A. 8/28—Sioux Falls Argus-Leader, 210 W. Ninth St., 2 story, bsmnt., 99x142 ft., newspaper plant at Minnesota Ave. and 10 St., $750,000, Hugill, Blatherwick & Fritzel, 367 Boyce Greeley Bldg., archts., Larson & McLaren, 1901 Foshay Tower, Minneapolis, Minn., assoc. archts. CD 6/12.

† **Missouri**—OFFICE, etc.—B.A. on or about 9/5—U. S. Eng., 300 Broadway, Little Rock, Ark., office, service bldgs., utilities, CIVENG 03-050-53-4.

Tex., Austin—HEADQUARTERS—B.A. 9/13—Veterans of Foreign Wars, 801 Rio Grande St., 5 story, masonry headquarters bldg., $375,000. Plans deposit $25, Doyle M. Baldridge and Glynn L. Harris, 1708 Guadalupe St., archts. CD 6/18.

N. M., Alamogordo—HOUSING—B.A. About 9/15—U. S. Eng., 2134 E. Central Ave., Albuquerque, construct, manage, finance 400 family quarters, outside utilities, incl. streets, water, sewer, gas and elec. distr. sys., Holloman Air Force Base, ENG 29-005-53-7. Proj. 49-MCA-WH, D-1. CD 2/4.

Tex., Houston—LABORATORY—Bids Asked—Magnet Cove Barium Corp., 5001 Richmond Rd., research laboratory, office $300,000, Geo. and Abel B. Pierce, 4511 Kyle St., archts. CD 7/31.

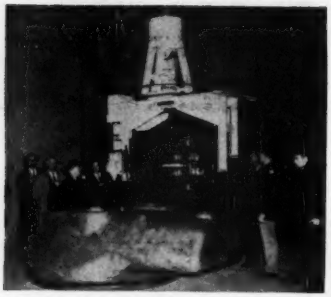
HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Fred Weber Contractor, Inc., 7929 Alabama Ave., St. Louis 11, Mo. CA $512,000, paving 88,000 sq. yd. taxiways at Lambert-St. Louis Municipal Airport, ST. LOUIS, MO. City, Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, 12 and Market Sts., St. Louis 3, Mo. awarded July 29. CD 4/18/47.

† **Peterson, Garbi & Joseph Inc.,** 123 E. 9 St., Little Rock, Ark., LB, $573,040, ground storage water reservoir at Army and Navy General Hospital, HOT SPRINGS, ARK. U. S. Eng., 300 Broadway, Little Rock, Ark. CD 6/19.

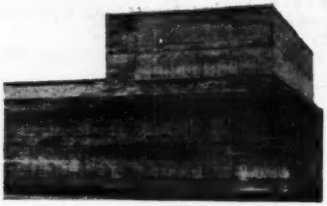
▲ **H. B. Zachry Co.,** Box 2570, San Antonio, Tex. CA $1,367,272, raw water conduit and appurtenances, FORT WORTH, TEX. City, Fort Worth, Tex. CD 7/29, under LB.



This Betatron is an extra powerful x-ray camera capable of generating 24,000,000 electron volts.

GIANT X-RAY MACHINE

supported by Koppers Pressure-Creosoted Piles



This 4,000-ton concrete Betatron Building is supported by Koppers Pressure-Creosoted Foundation Piles.

ONE of the two largest industrial Betatrons in the world is installed at the Eddystone Plant of General Steel Castings Company. It was built by the U. S. Army Corps of Engineers, Philadelphia District. This powerful 24,000,000-volt x-ray machine is used to inspect heavy steel castings for U. S. Army tanks.

Personnel is protected from dangerous radiation by solid concrete walls 6-feet thick. To support the 4,000-ton Betatron Building and provide the absolute stability required, Koppers Pressure-Creosoted Foundation Piles were used.

Koppers Pressure-Creosoted Piles provide *lasting* protection—and they *cost less* than other permanent pile materials. For more information on Koppers Pressure-Creosoted Piles, write to Koppers Company, Inc., Pittsburgh 19, Pa.

KOPPERS COMPANY, INC., Pittsburgh 19, Pa.

KOPPERS PRESSURE-TREATED WOOD

Russ Mitchell, Inc., Box 8068, Houston, Tex. LB $687,668. est. $720,000. storm sewers, Foster Place Belmont, HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids July 30. CD 4/19/51.

A. G. & L. L. Ray, 4660 Holmes Rd., Houston, Tex. Day Labor. $45,000. water sys., HOUSTON, TEX. Rob. Atkinson, First National Bank Bldg., Houston, Tex., engr.

A. G. & L. L. Ray, 4660 Holmes Rd., Houston, Tex. Day Labor. $62,000. storm sewers; $60,000. sanitary sewers, HOUSTON, TEX. CD 7/28.

A. G. & L. L. Ray, 4660 Holmes Rd., Houston Tex. Day Labor. $40,000. site ear.hwork, grading, leveling, filling, HOUSTON, TEX. Rob. Atkinson, First National Bank Bldg., Houston, Tex., engr.

A. G. & L. L. Ray, 4660 Holmes Rd., Houston Tex. Day Labor. $65,000. street constr. asph. paving, HOUSTON, TEX. CD 7/28.

A. G. & L. L. Ray, 4660 Holmes Rd., Houston, Tex. Day Labor. $60,000. park, HOUSTON, TEX. Rob. Atkinson, First National Bank Bldg., Houston, Tex., engr.

Gregg County Dist. 1, Court House, Longview, Tex. Owner Builds. $40,000. exten. some water mains, LONGVIEW, TEX. CD 3/25.

Gregg County Dist. 1, Court House, Longview, Tex. Owner Builds. $65,000. sanitary sewer collection line unit, LONGVIEW, TEX. CD 3/25.

C. L. Andrews, Bryan, Tex. LB. $35,516. c.i. water lines, LOTT, TEX. City, Lott, Tex. Bids July 28. CD 7/15.

City, McAllen, Tex. Owner Builds. $75,000. storm sewers, McALLEN, TEX. Sigler-Clark & Winston, Weslaco, Tex., engrs.

City, McAllen, Tex. Owner Builds. $70,000. street paving and drainage, McALLEN, TEX. Sigler-Clark & Winston, Weslaco, Tex., engrs.

City, Victoria, Tex. Owner Builds. $65,000. sanitary sewer sys., rehabilitation work, VICTORIA, TEX. Lockwood & Andrews, Union Natinoal Bank Bldg., Houston, Tex., engrs. CD 4/7.

† **M. M. Paul & Son Paving Co.,** 1000 E. Manueal Ave., Albuquerque, N. M. LB $166,215. aircraft parking apron; LB $143,319 aircraft taxiways, Kirtland Air Force Base, Inv. 29-005-53-5, ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids July 30. CD 7/16.

MONTANA—State Hy. Comn., Helena,

Morgenstern & Scheit, Missoula, Mont. CA $331,660. grade, grav. oil, drain 9.295 mi. Hamilton-Florence Rd., Ravalli Co.

Nilson-Smith Constr. Co., 812 2 St. S., Great Falls, Mont. CA $254,411. grade, drain 10.32 mi. Dillon-Twin Bridges Rd., Madison Co.

Peter Kiewit & Sons Co., Sheridan, Wyo. CA $90,000. grade, grav., oil, drain 6.053 mi. Permax-Hot Springs Rd., Sanders Co.; LB $95,549. grade, grav. drain 5.153 mi., Wyola-west Road, Big Horn Co. Grand Total $771,620. Bids July 30.

Stanley Arkwright, 1200 Sixth Ave., Billings, Mont. LB $97,835.

McLaughlin Constr. Co., Livingston, Mont. LB $136,459. plant mix surf.; LB $112,610. oil penetration; LB $125,665. road mix. street paving, LIVINGSTON, MONT. City, Livingston, Mont.

Maszozzi Constr. Co., Fairplay, Colo., LB, $167,345, Lake George and Secondary pumping station and operator's residence, appurtenant facilities;

Douglas Jardine, 516 Tejon St., Colorado Springs, Colo., LB, $323,862, installing 15,475 lin. ft. 30-in. vit. clay pipe, manholes, appurtenances, COLORADO SPRINGS, COLO. City, City Hall, Colorado Springs, Colo. CD 1/12/51.

BUILDINGS

LOW BIDS AND CONTRACTS

Larsen Bros., 10 N. Main St., Council Bluffs, Ia., LB, $508,088, general contract, SCHOOL at Glenwood State Hospital, GLENWOOD, IA. Iowa State Board of Controls, Des Moines, Ia. Bids July 24.

G. L. Tarlton Contg. Co., 5505 Dale Ave., St. Louis 10, Mo. CA $798,077. est. $1,430,000. 6 sty., penthouse, 44x158 ft. Renard HOSPITAL, Audubon and Euclid Aves., ST. LOUIS, MO. Washington University School of Medicine, Office of Dean, 660 S. Kingshighway, St. Louis 10, Mo. CD 7/15 under LB.

Phillips Petroleum Co., Bartlesville, Okla. Day Labor. $136,000. 2 service STATIONS, AMARILLO, TEX. CD 7/24.

▲ **Delta Engineering Corp.,** 2121 San Felipe Rd., Houston, Tex. CA $2,225,000. natural gasoline PLANT, BIG SPRING, TEX. Reef Fields Gasoline Corp., 1533 Bissonnet St., Houston, Tex., and Skelly Oil Co., Skelly Bldg., Tulsa, Okla.

▲ **Lummus Co.,** 385 Madison Ave., New York, N. Y. CA approx. $14,000,000. crude oil REFINERY, CORPUS CHRISTI, TEX. Suntide Refining Co., c/o Sunray Oil Co., First National Bank Bldg., Tulsa, Okla. CD 7/9.

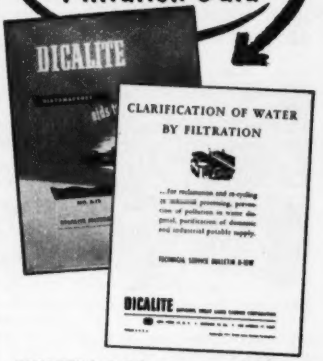
Prokop Building Co., Inc., 7015 Long Point St., Houston, Tex. CA $300,000. 30 DWELLINGS, HOUSTON, TEX. Prokop Development Co., 7015 Long Point St., Houston, Tex. CD 7/31.

Frank G. Parker, Harlingen, Tex. CA $88,100. bottling PLANT, HARLINGEN, TEX. Pepsi-Bottling Co., Harlingen, Tex. C. Lymon Ellis & Co., Harlingen, Tex., archts.

Rob. H. Smith & Co., 1915 Kolfahl St., Houston, Tex. CA $89,175. WAREHOUSE, HOUSTON, TEX. United Properties Corp., 4607 Walker St., Houston, Tex. CD 7/30.

Thad Dederick Constr. Co., 1532 Peden St., Houston, Tex. CA $84,750. WAREHOUSE, HOUSTON, TEX. W. F. Hagen & Co., 619 Pecore St., Houston, Tex.

Send For This New Water Filtration Data



BULLETIN B-12 on general filtration principles; BULLETIN B-12-W details information on filtering potable and waste water.

DICALITE DIVISION

GREAT LAKES CARBON CORPORATION

612 S. Flower St., Los Angeles 17, Calif.

Lan Tex. Constr. Co., 2821 Manor Hy., Dallas, Tex. Owner Builds. $85,000. WAREHOUSE, DALLAS, TEX.

Teliepsen Constr. Co., 1710 Telephone Rd., Houston, Tex. CA, $88,500. WAREHOUSE, HOUSTON. TEX. Field-Marks Co., 1710 Telephone Rd., Houston, Tex. L. Gabert, 1315 Bell St., Houston, Tex., archt.

South Texas Stone Co., 312 Schrimpf St., Houston, Tex. Owner Builds. $100,000. stone mfg. PLANT, HOUSTON, TEX. CD 10/24/51.

H. K. Ferguson Co., 2620 Main St., Houston, Tex. LB, $219,000. steel LOCKER BLDG. and boiler house, HOUSTON, TEX. Sheffield Steel Corp., Industrial Rd., Houston, Tex. CD 7/7.

Redfearn Brothers, Kerns Bakery, 805 E. Methvin St., Longview, Tex. Purchase & Hire. $90,000. BAKERY, LONGVIEW, TEX. CD 4/10.

West Texas Compress & Warehouse Co., Lubbock, Tex. Owner Builds. $85,000. 3-unit WAREHOUSE, LUBBOCK, TEX.

Triple D. Motel, c/o Dodson Brothers, Wichita Falls, Tex. Owner Builds. $300,000. 70-unit MOTEL, MIDLAND, TEX. CD 7/30.

Walsh & Burney, 915 N. Flores St., San Antonio, Tex. CA $85,515. SHOP, SAN ANTONIO, TEX. Chessher Packard Inc., 314 S. Flores St., San Antonio, Tex. Clarence Rinard, Alamo National Bldg., San Antonio, Tex., archt.

Wooten Constr. Co., Wallace Bldg., Little Rock, Ark., LB, $374,000, general contract junior high SCHOOL, CAMDEN, ARK. Camden School Board, Camden, Ark. Bids July 30. CD 7/16.

Crossett Lumber Co., Crossett, Ark., Owner Builds, $300,000, 2 story, 50,000 sq. ft. PLANT, CROSSETT, ARK. CD 8/15/51.

Lee County Elevator Assn., Marianna, Ark., Owner Builds, $150,000, GRAIN ELEVATOR, MARIANNA, ARK.

Johnson & Lunn, Bismark, N. D. LB $483,816. general contract. Memorial COURT HOUSE, MANDAN, N. D. Morton Co., M. J. Tobin, aud., Mandan, N. D. Bids July 22. CD 7/1.

Marchant Brothers & Balay, Box 545, Mercedes, Tex. LB $699,880. est. $500,000. Fort Brown MEMORIAL CENTER, BROWNSVILLE, TEX. Fort Brown Memorial Center, City of Brownsville, Brownsville, Tex. Bids July 31. CD 6/19.

W. D. Faulkner, Pecos, Tex. Owner Builds. $435,000. 60 DWELLINGS, PECOS, TEX. CD 7/30.

Alston Constr. Co., 900 E. Broadway, Sweetwater, Tex. LB $105,000. freight and passenger STATION and loading and unloading platform, SWEETWATER, TEX. Gulf, Colorado & Santa Fe Ry. Co., W. T. Donoho, ch. engr., Sweetwater, Tex.

Platt Rogers, Inc., 1530 W. 13 St., Denver, Colo., CA, $429,810, general contract, 1 story Irving and Bradford SCHOOLS UNIT, PEUBLO, COLO., School District No. 60, Pueblo Co., 119 Colorado Ave., Pueblo, Colo. Awarded July 23, CD 10/23/50.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Washington**—B.A. About 8/20—U.S. Eng., 4735 E. Marginal Way, Seattle, 4, Wash., protection of Point Chehalis, Grays Harbor, Serial No. CIVENG 45-108-53-6.

† **Washington**—B.A. About 8/21—U. S. Eng. 4735 E. Marginal Way, Seattle, Zone 4, replacement of culverts in Pollin Levee, Pend Oreille River, vicinity of Cusick, Serial No. CIVENG 45-10853-5.

† **Wash., Richland**—B.A. 8/21—Atomic Energy Comn., Richland, 5 mi. 20- to 36-in. feeder mains.

† **California**—B.A. 8/26—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., eighteen 75,000 radial-gate hoists for spillway at Nimbus Dam, Central Valley Proj. American River Dist., Spec. DS-3758. Extended date. CD 7/17.

† **California**—B.A. 8/26—CIRCUIT BREAKERS—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., three 230-000-volt circuit breakers for Folsom Switchyard, Central Valley Proj. Spec. DS 4765. L. N. McClellan, ch. engr.

† **Oregon**—B.A. 8/26—U. S. Eng., Pittock Bldg., Portland, replace dolphins, constr. dolphins, government moorings.

† **Idaho**—B.A. 9/4—Bureau Reclamation, Dpt. Interior, Burley, Idaho, constr. laterals from wells 4B 824, 10A824, 10B824, 14A924, 15A824, North Side Pumping Division, Minidoka Proj. 8 to 10 mi. north and northeast of Rupert, Spec. 100C-152. CD 9/12/44.

† **Oregon**—B.A. 9/4—U. S. Eng., City-County Airport, Walla Walla, Wash., rock protection on Hys. U.S. 730 and 395, CIVENG 45-164-53-9.

† **Oregon**—B.A. 9/25—U. S. Eng., Pittock Block, Portland, clear area A Dexter Dam reservoir area, CIVENG 35-026-53-19.

† **Washington**—B.A. 9/11—Bureau Reclamation at Office Okanogan Irrigation District, Okanogan, Wash., rehabilitation of Conconully Dam and spillway, Okanogan Proj. about 14 mi. northwest of Omak, Wash., and 1 mi. south of Conconully, Spec. No. 100C-151. CD 5/24/51.

† **Wash., Everett**—HOUSES—B.A. 9/26—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, two 1,040 sq. ft. houses and one 1,250 sq. ft. single house, 1 story with 225 ft. sidewalks, clearing, grubbing, etc., Paine Air Force Base, ENG. 45-108-52-7. Extended date. CD 7/23.

BIDS ASKED—BUILDINGS

Wash., Buckley—PATIENTS BLDG.—B.A. 8/27—State Dpt. P. Institutions, Olympia, 1 story, part bsmnt., 40,000 sq. ft. cerebral palsy patients bldg. $400,000. Plans deposit $50. Naramore, Bain, Brady & Johnson, 904 7 Ave., Seattle, Wash., archts.

† **Utah, Tooele**—MAGAZINES, etc.—B.A. 8/28—U. S. Eng., P. O. Box 2852 Building 97-A, Fort Douglas, Utah, 100 ammunition magazines, mounded concrete arch (igloo type) and grading of storage areas and bit. Blocks Nos. 612 and 614, Toole Ordnance Depot, Serial No. ENG 04-203-52-1008.

† **Wash., Camp Hanford**—PREFABRICATED BLDG.—B.A. 9/10—U. S. Eng., City-County Airport, Walla Walla, prefabricated buildings, water storage, sanitary sewage system, Eng. 45-165-53-5. W. N. Mills, City-County Airport, Walla Walla, engr. CD 5/29.

Ariz., Florence—REFINERY—Bids Asked—Proven Oil & Refining Co., c/o L. M. Glasco, M & W Tower Bldg., Dallas, Tex., gasoline refinery. CD 7/31.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Allis-Chalmers Mfg. Co.**, 1126 S. 70 St., Milwaukee, Wis., CA, $2,110,000, turbines for Box Canyon Dam Newport on Pend Oreille River, WASHINGTON Pend Oreille Co. Public Utility Dist., Newport, Wash. CD 5/15, under LB.

Thornburn & Logozo, 4608 36 Ave. S. W., Seattle, Wash., LB, $237,207, Sch. C, sewer lines;

Atherton Constr. Co., Terminal Sales Bldg., Seattle 1, Wash., LB, $229,852, activated sludge type treatment plant, pump station, 3 flushing stations, BELLEVUE, WASH. Bellevue Sewer Dist., Bellevue, Wash. Bids July 31. CD 7/3.

† **McAtee & Heathe**, Box 4083, Station B, Spokane, Wash., LB. $104,365, utilities at Larson Air Force Base ENG. 45-165-52-37, MOSES LAKE, WASH. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids July 29. CD 7/9.

† **OREGON**—Bureau P. Rds., Morgan Bldg., Portland, rejected bids July 31. imprv. 3.252 mi. Cascade Lakes Hy., Deschutes Co. LB. $127,660. CD 7/23.

† **Cox Constr. Co.**, Box 502, Oswego, Ore. LB $49,530, grav. embankment, Southern Pacific R.R. line. CIVENG 35-026-53-10, OREGON. U. S. Eng., 628 Pittock Block, Portland, Ore. Bids July 29.

CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles, Calif. cancelled bids to have been opened Aug. 21 redecking 32 timber trestle bridges between Danby and Needles with rein.-con. slabs, San Bernardino Co. CD 7/30.

CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,

Baun Constr. Co., P.O. Box 1281, Fresno, Calif., LB. $108,551, rein.-con. bridge, approaches of plant mix surf. 0.5 mi. at White's Bridge across Kings Slough 27 mi. S. of Mendota, Fresno Co. Bids July 30. CD 7/9.

CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles, Calif.

Guy F. Atkinson Co., 10 West Orange Ave., South San Francisco, Calif., LB, $958,873, hy. constr., grade separations, etc. on Colorado Freeway in Pasadena between Avenue 64 and San Rafael Ave., Pasadena-Los Angeles Co. Bids July 31. CD 7/9.

CALIFORNIA—State Div. Hys., 100 S. Spring St., Los Angeles

Ukropina-Polich-Kral, Box 150, San Gabriel, Calif., CA, $694,419, grading, hy. constr., bridge, etc. 1 mi. on Santa Ana Freeway between Orr and Day Rds. and Pioneer Blvd., Los Angeles Co. Bids July 17, awarded July 31. CD 7/28, under LB.

▲† **Haddock Engineers Ltd.**, 1616 Greenwood Ave., Montebello, Calif., CA, $1,009,700, enlisted mens club, supply facilities, pump house and station, Naval Air Station, NOY 71090, Spec. 32644, MIRAMAR, CALIF. Dpt. Navy, San Diego, Calif. Bids July 11, awarded July 30. CD 7/18, under LB.

† **A. J. Peters & Son**, 534 Stockton Ave., San Jose, Calif., LB, $521,411, auxiliary system for 8 ft. supersonic wind tunnel, A-8250, MOFFETT FIELD, CALIF. National Advisory Comm. for Aeronautics, Moffett Field, Calif. Bids July 28. CD 6/24.

† **Del. E. Webb**, P. O. Box 4066, Phoenix, Ariz., LB, $667,270, aircraft shops, Spec. 1626, TRAVIS AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids July 31. CD 7/15.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **C. H. Elle Constr. Co. and Vitt Constr. Co.**, Pocatello, Idaho, LB, $1,987,000, 400-unit HOUSING project at air base, IDA-IDI MOUNTAIN HOME, IDAHO. Public Housing Admin. 1360 Mission St., San Francisco, Calif. Bids July 29. CD 7/7.

Chytraus Bros. Co., 3040 Redondo Ave., Salt Lake City, Utah, LB, $430,800, est. $537,000, Glendale Park Elementary SCHOOL, 1415 California Ave., SALT LAKE CITY, UTAH Bd. Educ., 440 East 1 South St., Salt Lake City, Utah. Bids July 22. CD 7/9.

† **McDonald Bros.**, 6014 W. Adams Blvd., Los Angeles, Calif., CA, $885,400, 38 emergency type BARRACKS, Camp Irwin, ENG. 04-353-52-75, BARSTOW, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids July 24. CD 7/16.

Indenco Inc., 960 98 Ave., Oakland, Calif., LB, $592,000, Bret Harte SCHOOL, HAYWARD, CALIF. Hayward Elementary School District, 1099 E. St., Hayward, Calif. Bids July 31. CD 7/21.

▲† **Alliance Constr. Co.**, 308 Monterey Rd., South Pasadena, Calif., CA, $2,638,473, SUBSIDENCE bldg., bakery and 8 barracks, C. B. Battilion Center. Spec. 32622, PORT HUENEME, CALIF. Dpt. Navy, San Diego, Calif. Bids July 9. CD 7/16, under LB.

▲ **H. M. Hodges & Pozzo Constr. Co.**, 5531 Venice Blvd., Los Angeles, Calif., CA, $1,125,000, 3 story, rein.-con. PLANT and biological sciences bldg., RIVERSIDE, CALIF. University of California, 405 Hilgard Ave., Los Angeles, Calif. Bids July 15. CD 7/24, under LB.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **Alaska**—POWER PLANT—B.A. 8/27—U. S. Eng., 3013 Arcade Bldg., Seattle 1, Wash., steel frame power plant extens. on rein.-con. fn. with 6 boilers and 4 generators 23x61 ft. steel frame, masonry warm storage bldg. ENG 95-507-52-6, Ladd Air Force Base, Plans deposit $50. Extended date. CD 7/11.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **ALASKA**—Bureau P. Rds., Dpt. Commerce, 419 Federal and Territorial Bldg., Juneau,

Manter Constr. Co., Vance Bldg., Seattle 1, Wash. CA $413,775. clearing, grubbing, grading, surf. 1.693 mi. Sitka Hy. Proj. 11-85. Bids July 25. CD 7/15.

† **Lytle-Birch-Green**, Securities Bldg., Seattle, Wash. CA. $492,735. commissary facilities, Eielson Air Force Base, Eng. 52-29, ALASKA. U. S. Eng., Anchorage, Alaska. Bids July 30. CD 7/2.

▲† **Boen-Sealand Constr. Co.**, 3647 Stone Way, Seattle, Wash. LB. $2,438,118. sixteen 8-family living quarters, Eielson Air Force Base, Inv. 53-43, ALASKA. U. S. Eng., 3013 Arcade Bldg., Seattle 1, Wash. Bids July 29. CD 7/2.

▲† **Valle-Sommers Constr. Co.**, 407 3 Ave. W., Seattle, Wash. CA. $2,654,745. converted 500-man barracks, Eng. 52-32,

Birch-Lytle-Green, 407 Third St., Seattle, Wash. CA. $175,725. utilities contract to serve barracks, Eng. 52-47, Elmendorf Air Force Base, ALASKA. U. S. Eng. (APO 942, c/o PM, Seattle, Wash.), Anchorage, Alaska. CD 1/25, under LB.

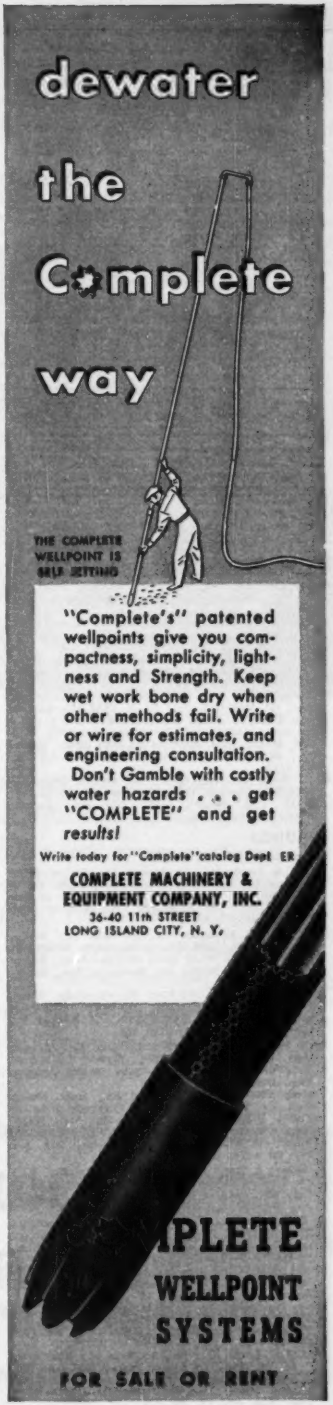
† **Canora Constr. Co.**, Fairbanks, Alaska. LB. $659,231. troop facilities, Ladd Air Force Base, Eng. 53-5, ALASKA. U. S. Eng., Anchorage, Alaska. Bids July 29. CD 7/22.

LATIN AMERICA

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Flores & Costa, S. A.; Grana & Montero, S. A. and R. Vargas, Prado y Cia. Lima, CA, $2,000,000** 20 story, Ministry of Education bldg. with 12 story wings, steel, LIMA, PERU. Govt. of Peru, Ministry of Education, Lima, Peru. Enrique, Secane Ros., Lima, Peru, archt.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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Mass., Bedford—B.A. 8/28—Town, Sewerage Comn., Town Hall, 14 in. force mains, gravity sewers. $250,000. Plans deposit $50. Thomas Worcester Inc., 84 State St., Boston, engr. CD 5/16.

BIDS ASKED—BUILDINGS

† **Mass., Wellfleet**—FACILITIES—B.A. On Or About 8/22—U. S. Eng., 857 Commonwealth Ave., Boston, Zone 15, (1) 10 20x40 ft., E.M. STD. T.O. Type L-D-T lavatory bldgs.; (2) three 20x24 ft. OFF. STD. T.O. Type L-B-T lavatory bldgs.; (3) nine 20x120 ft., E.M. STD. T.O. Type M-AC-T. mess bldgs.; (4) five 20x100 ft., E.M. STD. T.O. Type M-AC-T (superstructures only) mess bldgs.; (5) three 20x48 ft., STD. T.O. Type OB-C-T admin. bldgs.; (b) water supply and distr.; (c) sewage collection and treatment plant; (d) electrical distr.; (e) roads; (f) grading at Camp Wellfleet. Inv. No. ENG. 19-016-53-5. Plans deposit $15. CD 12/28/51.

† **N. H., Mt. Washington**—LABORATORY, etc.—B.A. on or About 8/26—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass., helicopter testing apron, control house, fuel storage facilities, security fence and climatic projects laboratory. Serial No. ENG 19-016-53-16. Plans deposit $10. CD 12/18/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., State House, Augusta,

The Bridge Const. Corp., 341 Water St., Augusta, Me. CA. **$134,796,** bit. gravel road 2.405 mi., Me. State Secondary Proj. No. S-0300 (1) "N-2", Jonesport. **Thomas DiCenzo**, Calais, Me., CA **$167,272,** bit. gravel road 3.21 mi. Me. State Secondary Proj. No. S-0306 (1), "189", Lubec. Bids July 30. CD 7/23.

MASSACHUSETTS—Commonwealth of Mass. Dpt. P. Wks., 100 Nashua St., Boston,

Dooley Bros. Inc., 39 George St., Roxbury, Mass., LB **$91,532.** highway work South Huntington Ave. Boston;

T. J. Harvey & Son, Inc., 30 Center St., Adams, Mass. LB **$74,573,** reconst. Hy. and bridge, Great Barrington;

John N. Bianco Co., 3 Breakheart Rd., Saugus, Mass. LB **$63,796,** Northern Circumferential Hy. Lynnfield. Bids July 29. CD 7/17.

B. Perini & Sons Inc., 73 Montwait Ave., Framingham, Mass. LB. **$383,010.** shaft 8; LB. **$531,333.** shaft 9, total **$906,154.** Contr. 162 A and B, 8 and 9 shafts city water tunnel exten., Boston and Somerville, BOSTON, MASS. State, Metropolitan Dist. Comn., Constr. Div., 20 Somerset St., Boston, Mass. Bids July 31. CD 7/16.

D. F. Pesce Co., 265 Carter St., Chelsea, Mass. CA **$306,930,** highway throughout the city. CHELSEA, MASS. City, Mayor's Office, City Hall, Chelsea, Mass. Bids July 28.

BUILDINGS

LOW BIDS AND CONTRACTS

Temple & Crane, Inc, 80 Federal St., Boston, Mass. CA. Approx. **$100,000.** steel WAREHOUSE, office, Hollis St., NASHUA, N. H. Edgecomb Steel of New England, Inc., 950 Bridgeport Ave., Milford, Conn. Bids July 17. CD 7/15.

George B. H. Macomber Co., 19 Milk St., Boston, Mass. CA. est. **$300,000.** modernization BUILDING, BOSTON, MASS. Young Men's Christian Assoc., Metropolitan Bd., Dr. Hohns, 316 Huntington Ave., Boston, Mass. CD 5/8.

▲ **Platt Constr. Co.**, 99 First St., Cambridge, Mass., LB **$1,928,000,** 175 unit HOUSING, Mass-23-2. LYNN, MASS. Lynn Housing Auth., 58 Andrews St., Lynn, Mass. CD 4/25 under LB.

Louis Proia Constr. Co., 48 Silver Lake Ave., Newton, Mass. LB. **$300,000.** SCHOOL. Summer St. Exten., ROCKPORT, MASS. Town, School Comn., Rockport, Mass. Bids July 31. CD 7/16.

Peabody Const. Co., 27 Farragut Rd., South Boston, Mass. CA. **$413,007,** Cont. No. 7, remodel Industrial SHOPS, Bldgs. 5 and 7, Myles Standish State School, Proj. P-M51. TAUNTON, MASS. State, Dpt. Mental Health, 15 Ashburton St., Boston, Mass. Bids June 20. CD 6/24, under LB.

O. Ahlberg & Sons, Inc., 48 Molter St., Cranston, R. I. CA. **$337,400,** SCHOOL, Oaklawn, CRANSTON, R. I. City, Supt. Schools, Park Ave., Cranston, R. I. Bids July 22. CD 7/11.

▲ **Gilbane Building Co.**, 90 Calverly St., Providence, R. I., CA. **$1,750,000.** 3 story, basmt., 50,000 sq. ft. brick, limestone trim Home OFFICE Bldg., S. Main and Planet Sts., PROVIDENCE, R. I. Fireman's Mutual Insurance Co., 10 Weybosset St., Providence, R. I. Cram & Ferguson, 248 Boylston St., Boston, Mass., engrs.

George Hickey Inc., 13 Spring St., Stamford, Conn., LB. **$574,890,** SCHOOL, South Pine Creek, FAIRFIELD, CONN. Town, Bd. Educ., Fairfield, Conn. Bids July 29. CD 7/25.

Mott-Mohr Constr. Co., Inc., 15 Mead St., New Haven, Conn., LB. **$969,000,** Junior High SCHOOL ADDNS., alterations, Mapes Ave. and Anthony St. NORTH HAVEN, CONN. Town, Bd. Selectmen. North Haven, Conn. Bids July 31. CD 7/9.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. Y., Idlewild—ELECTRICAL INSTALLATIONS—B.A. 8/18—At office of the Chief Engineer of the Port of New York Auth., 111 8th Ave., New York, Zone 11, electrical installation and the const. of a switch house for Runway D and associated taxiways at New York International Airport. Cont. NYA-260.002. Plans deposit $25. adv. ENR 7/31. CD 4/27/44.

† **Md., Baltimore**—B.A. On Or About 8/19—U. S. Eng., 24th St. and Maryland Ave., P.O. Box 1715, Baltimore, Zone 3, parking areas and sidewalks, Veterans Admin. Hospital. Serial No. CIVENG 18-020-53-5.

N. Y., Wassaic—B.A. 8/21—Bureau Contracts & Accounts, Albany, water supply sys. addn., Wassaic State School. Plans deposit $30. CD 3/29/45, under Public Buildings.

New York—TUNNEL LINING—B.A. 8/25—Port of New York Auth., 111 8th Ave., New York 11, N. Y., manufacture, storage and delivery of c.i. and cast steel tunnel lining for Third Tube of Lincoln Tunnel, Cont. LT-160-001. Plans deposit $25. CD 3/12/51.

N. Y., Jones Beach—COMMISSARY, SUPPLY BLDG. SHELL—B.A. 8/29—Long Island State Park Comn., Administration Headquarters, Belmont Lake State Park, Babylon, (a) const. exterior shell, phase 1 (b) sanitary-roughing for const. of exterior shell of a Commissary and Supply Bldg., at Jones Beach State Park. Skidmore, Owings & Merrill, 575 Madison Ave., New York, Zone 22, consult. engrs. and archts.

BIDS ASKED—BUILDINGS

N. Y., New Paltz—LIBRARY—B.A. 8/28—Bureau Contracts & Accounts, Albany, library at State Teachers College. Plans deposit $30. CD 11/28/45.

N. Y., Poughkeepsie—STOREHOUSE—B.A. 8/28—Bureau Contracts & Accounts, Albany, Bldg. 49, storehouse, cold storage, bakery and vegetable preparation bldg. at Hudson River State Hospital. Plans deposit $30. CD 11/30/44.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

NEW YORK—State Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany,

Howes & Farrell, Inc., 321 E. Walnut St., Oneida, N. Y. LB. **$234,338.** widen and resurf. 5.4 mi. Rte. 29A, Fulton Co. Bids July 31. CD 7/10.

Gibraltar Constr. Co., Inc., 10 Van St., West Brighton, 10, Staten Island, LB, **$108,132,** est. $100,565, sanitary sewers, appurtenances across Laurelton Parkway, 137 and 40 Rds.; Brookville Blvd., Browvale Lane; 137, 136, 135, 128, 42 and Braddock Aves.; 241, 242, 243 and 249 Sts.; combined sewer appurtenance; 15 Dr., 16 Ave., 10 Rd., NEW YORK. President Queens Boro, Queens Boro Hall, 120-55 Queens Blvd., Kew Gardens, 24, N. Y. Bids July 29. CD 7/23.

▲ **Charles F. Vachris, Inc.**, 9024 Ditmas Ave., Brooklyn, N. Y. CA, **$2,150,975,** Cont. NLP-1 construct northbound pavement of Laurelton Parkway from Southern State Parkway to South Conduit Ave., Queens Boro, NEW YORK Triborough Bridge & Tunnel Auth., Administration Bldg., Randalls Island, New York, 35, N. Y. Bids July 22. CD 7/29, under LB.

M. & L. Contg. Corp. 30-03 30 Ave., Long Island City, N. Y. and **Rizzi Constr. Co., Inc.**, 101 Park Ave., New York, N. Y., LB, **$429,425,** est. $418,412, combined sewers, appurtenances in 160 St. from 21 to 29 Aves.; 29 Ave. from 160 to 167 Sts., NEW YORK. President Queens Boro, Boro Hall, 120-55 Queens Blvd., Kew Gardens, Zone 24, N. Y. Bids July 22. CD 7/15.

Dpt. P. Wks., Municipal Bldg., New York, Zone 7, cancelled bids to have been opened July 30, Contr. 3, Long Island Intercepting Sewers, Bowery Bay Sewage Treatment Works Extens. Queens Boro, ASTORIA, N. Y. CD 7/15.

Slattery Constr. Co., Inc., 46-36 54 Rd., Maspeth, N. Y. CA, **$893,000.** Cont. CIP-2 const. jetty and fill along Cross Island Parkway, Clearview Park, Queens Boro, WHITESTONE, N. Y. Triborough Bridge & Tunnel Auth., Administration Bldg., Randall's Island, New York, 35, N. Y. Bids July 28. CD 7/31, under LB.

Lee Corp., 1011 Tattenall St., Wilmington, Del. LB. **$188,861,** Bid I; **$187,461,** Bid II; **$87,603,** Bid III for steam distr. for National Park Service, Proj. 36-262. PHILA., PA. General Services Admin., Public Buildings Service, General Services Bldg., Wash., D. C. Bids July 29.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Bero Engineering & Constr. Co., Hampton, Va. LB **$357,873.** 6 span steel I beam bridge, 44 ft., 53 ft., 53 ft., 56 ft., 68 ft., 41 ft. to carry Westminster By-pass over State Rte. 31 stream and Wm. Md. R. R., Contr. CL 303-9-715, Carroll Co. Bids July 29. CD 7/17.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Nello L. Teer, Durham, N. C. LB **$819,572.** grading, drainage, paving dual hy. 2.036 mi. paving north bound lane, Baltimore-Harrisburg Expressway near Cockeysville, Contr. 8 578-10-415, Baltimore Co. Bids July 29. CD 7/14.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ † **L. G. DeFelice & Son, Inc.**, Nettleton Ave., North Haven, Conn., CA. Approx. **$6,000,000.** runway, paving, grading, Jet PLANT to be operated by Grumman Aircraft, in Calverton-Manorville-Wading River areas, RIVERHEAD, N. Y. Dpt. Navy, 18 St. and Constitution Ave. N. W., Wash. 25, D. C. Bids July 18. Awarded July 30. CD 7/24 under LB.

▲ **Christensen & Nielsen,** 114 Union St., Schenectady, N. Y., CA, **$1,850,000,** union SCHOOL, ROUND LAKE, N. Y. Central School District, Round Lake, N. Y. Perkins & Will, 309 W. Jackson Blvd., Chicago, 6, Ill., archts. Awarded July 23.

J. A. LaRocca Bros., 67 Zabriskie St., Jersey City, 7, N. J. LB. **$437,000,** three unit 54-families HOUSING project N.J. 16-2, HARRISON, N. J. Harrison Housing Auth., 788 Harrison Ave., Harrison, N. J. Bids July 29. CD 7/24.

Armiger Constr. Co., 2127 Maryland Ave., Baltimore 18, Md. CA **$100,000.** 1 story, 130x200 ft., steel, masonry MANUFACTURING BLDG., 2105 Worcester St., BALTIMORE, MD. Gordon Cartons Co., 1629 Warner St., Baltimore, Md.

SOUTH

BIDS ASKED—BUILDINGS

Ala., Huntsville—SCHOOL—B. A. After 8/18—City high school, $875,000. Van Keuren, Davis & Co., American Life Bldg., Birmingham, Ala., archts. CD 11/28/49.

Va., Petersburg—TELEPHONE BLDG.—B. A. 8/19—C. & P. Telephone Co. of Virginia, 39 N. Union St., 2 story, basmt., rein.-con. frame, brick, conc. masonry, telephone bldg., $500,000. Plans deposit $25. Carneal & Johnson, 1000 Atlantic Life Bldg., Richmond, Va., archts.

Ga., Wrightsville—SCHOOL—B.A. after 8/20—Johnson Co. Bd. Educ., Wrightsville, Negro Elementary High School, Approx. $400,000. Plans deposit $50. F. Arthur Hazard, Marion Bldg., Augusta, Fla., archt.

† **Va.,** Norfolk—TRANSPORTATION FACILITIES—B.A. 8/26—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, public works center transportation facilities at the U. S. Naval Base. NOY 70221. Spec. 30144. Plans deposit $75.

Ala., Birmingham—HOSPITAL—B. A. After 9/1—Holy Family Hospital, c/o Pembleton & Mims, archts., Title Guarantee Bldg., Birmingham, hospital, $870,000. CD 5/2.

N. C., Jacksonville—WAREHOUSE, etc.—B. A. After 9/1—Jones-Onslow Electric Membership Corp., Jacksonville, warehouse-office, $82,000. Wm. A. Coleman, Inc., Kinston, N. C., archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

A. Berney Jones, 409 Monroe St., Montgomery, Ala., CA **$660,011,** hangar-warehouse, crash truck station, motor service shop, etc. at Dannelly Field, MONTGOMERY, ALA. Alabama Air National Guard, Box 1311, Montgomery, Ala. Bids June 16. CD 6/25, under LB.

▲ **J. C. Codell Constr. Co.,** Winchester, Ky., LB, **$3,170,850,** McCallie Tunnel repairs and new tube in city of Chattanooga, Hamilton Co. Proj. SAP 979-A, TENNESSEE. State Hy. Dpt. and P. Wks., Cotton States Bldg., Nashville, Tenn. Bids Aug. 1. CD 7/8.

† **G. E. Moore Co.,** P. O. Box 1069, Greenwood, S. C., LB, **$678,647,** POL Sytem at Sewart Air Force Base Inv. 52-2, SMYRA, TENN. U. S. Eng., 303 Federal Bldg., Nashville 1, Tenn. Bids About July 22. CD 6/25.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Daniel Constr. Co.,** 492 N. Main St., Greenville, S. C. LB, **$1,900,000,** superstructure for generating PLANT, PINOPOLIS, S. C. South Carolina Public Service Auth. Moncks Corner, S. C. Bids June 24. CD 6/2.

▲ **Jordan Contg. Co.,** P. O. Box 1179, Columbus, Ga., CA, **$5,000,000,** mfg. PLANT, COLUMBUS, GA. Sunshine Biscuits Inc., Thomson Ave., Long Island City, N. Y. CD 7/16.

▲ **Taylor Constr. Co.,** 2875 N. Lejeune Rd., Miami, Fla., CA **$1,200,000,** HOTEL, MIAMI BEACH, FLA. Whitman Hotel, c/o contractor.

Bradford Builders, Inc., 1101 Lincoln Rd., Miami Beach, Fla., CA, **$616,422.** Tuberculosis WARD bldg. at Jackson Memorial Hospital, MIAMI, FLA. Dade Co. Comn., Court House, Miami, Fla. Bids July 22. CD 7/29, under LB.

Batson-Cook Co., West Point, Ga., CA, **$650,000,** mfg. PLANT, ABBEVILLE, ALA. Pepperell Mfg. Co., 160 State St., Boston, Mass. CD 7/28.

▲ **Derby Constr Co.,** Poplar Level Rd., Louisville, Ky. LB approx. **$2,200,000.** POWER PLANT generating station, FORD, KY. East Kentucky Electric Rural Cooperative Corp., Ford, Ky. Bids July 31. CD 7/9.

▲ **Blount Bros. Constr. Co.,** Box 1144, Montgomery, Ala., LB. **$1,000,000,** PLANT, BRISTOL, TENN. Sperry-Farragut Corp., c/o Smith, Hinchman & Grylls, Inc., archts., Marquette Bldg., Detroit, Mich. Bids July 30. CD 7/24.

James E. Green, Johnson City, Tenn., CA, **$565,000,** PLANT, ELIZABETHTOWN, TENN. Tri-State Container Corp., c/o D. R. Beeson, archt., Johnson City, Tenn. Bids July 25. CD 8/1, under LB.

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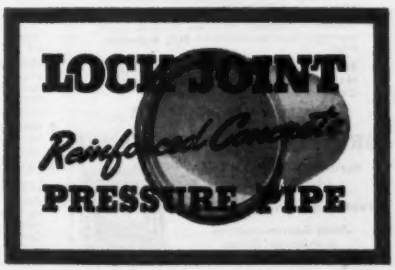

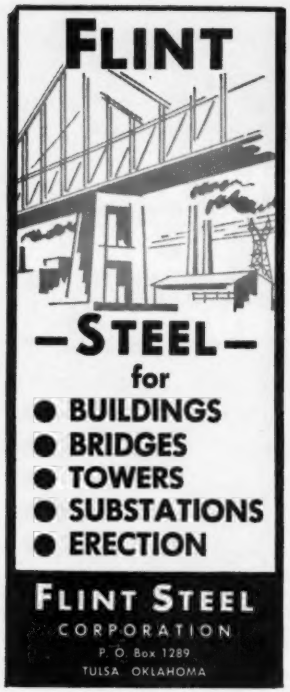

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▲ **C. F. Rule Constr. Co.**, 217 18 Ave. N., Nashville, Tenn., LB, **$1,376,805**, MEDICAL CLINIC bldg., NASHVILLE, TENN. Vanderbilt University, Nashville, Tenn. Bids July 31. CD 7/21.

MIDDLE WEST

BIDS ASKED—BUILDINGS

Ill., Quincy—RESIDENTIAL UNIT—B. A. 8/19—State, Springfield, general, heating, ventilating, plumbing, pipe covering, and electrical work, residential unit at Illinois Soldiers and Sailors Home, $700,000. CD 4/9/45.

Ill., De Kalb—EXCHANGE—B. A. 8/20—De Kalb-Ogle Telephone Co., De Kalb, dial exchange bldg., $750,000. Holabird & Root & Burgee, 180 N. Wabash St., Chicago 1, Ill., archts.

Mich., Grand Rapids—SCHOOL—B.A. 8/27—City, Bd. Educ., 143 Bostwick St., N. E., 2 story bsmnt., brick, steel elementary school. $450,000. J. & G. Daverman, 924 Grandville St., S. W. archts. CD 8/2/51.

▲ **Mich., Livonia**—SHOPPING CENTER—Bids Asked—Shelden Land Co., Warren Shelden, pres., 32121 Plymouth St., Plymouth, 250,000 sq. ft. brick, concrete, shopping center, parking, Farmington and Plymouth. $5,000,000. Charles N. Agree, 1140 Book Bldg., Detroit, archt. CD 6/16.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Illinois**—State Div. Hys., Springfield,

S. J. Groves & Sons Co., 1104 W. Reynolds St., Springfield, Ill., CA, **$1,387,453**, c. conc. 10.63 mi. U. S. 34, La Salle Co.;

Jansen & Schaefer, 1500 Broadway, Pekin, Ill., CA **$564,991**, c. conc. 4.56 mi. U. S. 51, Marshall, La Salle and Woodford Counties;

Trompeter Constr. Co., 2428 4 St., Peru, Ill., CA **$553,257**, hydraulic dredge fill and vertical sand drain installation 0.7 mi. U. S. 51, La Salle Co. Bids July 18, awarded July 31. CD 7/22, under LB.

Mid-States Constr. Co., Mount Vernon, Ill., LB, **$466,366** natural gas pipe line in Wayne Co. to connect with trunk line of Trunkline Gas Co. and natural gas distr. sys., FAIRCHILD, ILL. City, City Hall, Fairfield, Ill. Bids July 29. CD 7/16.

▲ **WISCONSIN**—State Hy. Comn., Madison,

Kramp Constr. Co., Rawson and Howell Sts., Milwaukee, Wis., CA, **$1,695,212**, Contract 1, grading, draining, base course 6.309 mi. The West Granville-Waukesha County Line and Milwaukee County Line-Washington County Line Road, Proj. F 03-1 (26) and F 03-1 (27) U. S. Hy. 41, Milwaukee and Waukesha Counties. Bids July 22. CD 7/28, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Sam W. Emerson Co., 1836 Euclid Ave., Cleveland 14, O. CA. **$600,000**. 3 story 33,000 sq. ft. WAREHOUSE, office at E. 18 St. and Payne Ave., CLEVELAND, O. Otis Elevator Co., 1375 E. 6 St., Cleveland 14, O. Walker & Weeks, 1240 Huron Rd., Cleveland O. Awarded July 30.

W. Butler Co., 1300 Minnesota Bldg., St. Paul, Minn., CA, Approx. **$500,000**, 4 story, bsmnt., MOTHERHOUSE and Novitiate, JOLIET, ILL. St. Francis Woods. Motherhouse and Novitiate, Joliet, Ill. CD 8/11/48.

▲ **Ragner Benson, Inc.**, 4744 W. Rice St., Chicago 51, Ill., CA, **$2,000,000**, 200,000 sq. ft., steel parts DEPOT, MELROSE PARK, ILL. Ford Motor Co., 3000 Schaefer Rd., Dearborn, Mich. Bids June 25, awarded July 28. CD 6/26.

Frank Burke & Son, 35 S. Dearborn St., Chicago 3, Ill., CA, **$600,000**, CHURCH, SCHILLER PARK, ILL. St. Gertrude Parish, 9613 Schiller Park Ave., Schiller Park, Ill. Bids July 14, awarded July 29. D 6/30.

Edward Rose, 14900 Linwood Ave., Detroit, Mich. Owner Builds. Approx. **$340,000**. 82 brick BUNGALOWS, CLAWSON, MICH.

Edward Rose, 14900 Linwood Ave., Detroit, Mich. Owner Builds. Approx. **$630,000**. 65 brick HOMES, Patton, 8 Mile and Greenwood Sts., DETROIT, MICH.

▲ **Bel Aire Gardens**, Harrison and Clements Sts., Livonia, Mich. Owner Builds. **$3,000,000**. three hundred and ten 50x130 ft. brick, frame ranch HOUSES, Harrison, Elmira, Garvett and Seltzer Aves. and Clements Circle., LIVONIA. MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **South Dakota**—B.A. 8/22—U. S. Eng., 1709 Jackson St., Omaha, Neb., administration bldg., Gavins Point Reservoir, Proj. near Yankton. Inv. 25-066-53-5. CD 7/9.

† **Montana**—B.A. 8/26—Bureau Reclamation, Dpt. Interior, Fort Peck, earthwork, excavation for dam foundation, Missouri Diversion Dam, Missouri-Souris Div., Missouri River Basin Proj., 6 mi. southwest of Frazer. Spec. No. DC-3769. adv. ENR 8/14/52. CD 5/25/44.

† **Nebraska**—B.A. 8/26—Bureau of Reclamation, Dpt. Interior, McCook, steel pipe flume for Superior Lateral System, Spec. 701C-274. CD 5/25/44.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Connor & Staveley Constr. Co.**, 1805 Grand St., Kansas City, Mo. LB **$416,000**. Constr. repair dikes revetment, adjacent to Missouri River at Lincoln-Upper Cottier Bends, near Corning, Inv. 25-066-53-17, MISSOURI AND NEBRASKA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids July 30. CD 7/24.

† **U.S. Eng.**, 1709 Jackson St., Omaha, Nebr., rejected bids July 24, addnl. roads, railroads at Rapid City Air Force Base, Inv. 53-5, LB **$594,998**. RAPID CITY, S. D. CD 7/29, under LB.

† **Parrish & Linneman**, 1451 Zenobia St., Denver, Colo., LB. **$288,174**, roads and railroads at Lowry Air Force Base, Inv. 52-154, DENVER, COLO. U. S. Eng., 1709 Jackson St., Omaha, Nebr. Bids July 15. Bids 6/3 rejected. CD 6/12, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Ringland Johnson, Inc., 820½ Locust St., Des Moines, Ia., LB, **$525,000**, Washington-Jefferson SCHOOL, CLINTON, IA. Clinton School Dist., 4 St. and 6 Ave. Clinton, Ia. Bids July 28. CD 7/17.

Fruin-Colnon Contg. Co., 1706 Olive St., St. Louis 3, Mo. CA 2 story, 42x58 ft., brick, concrete COMPRESSOR STRUCTURE, 1808 S. Second St., ST. LOUIS, MO. Monsanto Chemical Co., 1700 S. Second St., St. Louis 4, Mo.

Fisher Constr. Co., 7211 Greeley St., Houston, Tex., CA, **$401,998**, CHURCH, HOUSTON, TEX. St. John the Divine Church, 2450 River Oaks Blvd., Houston, Tex. Bids July 15. Awarded July 28. CD 7/24, under LB.

▲ **Seven-Eleven Food Stores**, 2522 McKinney St., Houston, Tex. Owner Bulids. **$1,250,000**. Several masonry food store units, HOUSTON, TEX. CD 3/24.

Mayer-Osborn Co., 1717 E. Colfax Ave., Denver, Colo., CA. **$500,000**, conc. 125 ft. high FEED MILL, BRIGHTON, COLO. Denver Feed Co., 20 and Wazee Sts., Denver, Colo. Awarded July 2.

Mead & Mount Constr. Co., Railway Exchange Bldg., Denver, Colo., CA. **$659,000**, general contract 5 story, 70,000 cu. ft., ATHLETIC CLUB ADDN., DENVER, COLO. Denver Athletic Club, 1325 Glenarm Pl., Denver, Colo. Bids June 26, awarded July 25.

A. W. Soderberg Constr. Co., 910 E. Indianapolis St., Wichita, Kan., CA, **$400,000**, 1 story 200x385 ft. brick, concrete WAREHOUSE and office, PUEBLO, COLO. Associated Grover of Colorado Inc., Pueblo, Colo. C. Francis Pillsbury, 320 Midland Savings Bldg., Denver, Colo., archt. and engr. Awarded July 16. CD 1/23/52, under LB.

FAR WEST

BIDS ASKED—BUILDINGS

Calif., Soledad—HOUSING—B.A. 8/25—Housing Auth. of City of Soledad, Soledad, 26 unit, block Housing project. Butner, Holm & Waterman, 1112 Pajaro St., Salinas, archts.

Ore., Portland—SCHOOL—B.A. 8/27—School Dist. No. 1, 631 N. E. Clackamas St., Portland, George Atkinson Elementary School. Plans deposit $50. Belluschi and Skidmore. Owings & Merrill, 2040 S. W. Jefferson St., archts.

Calif., Eldridge—WARD BLDGS., etc.—B.A. 9/11—State Div. Architecture, P. Wks. Bldg., Sacramento, 6 ward bldgs. and comm. bldg. at Sonoma State Home. Plans deposit $100.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Guy F. Atkinson Co.**, 10 Orange Ave., South San Francisco, Calif., LB. **$1,214,338**, repairs and alterations to San Pablo Water supply tunnel extending between San Pablo Reservoir and San Pablo Filter Plant, Contra Costa Co. LS-579, OAKLAND, CALIF. East Bay Municipal Utility Dist., 512 16 St., Oakland, Calif. Bids July 25. CD 7/14.

† **A. Teichert & Son, Inc.**, 1931 Stockton Blvd., Sacramento, Calif., LB. **$435,846**, aircraft storage area, approach road, etc. McClellan Air Force Base, ENG 53-3 Spec. 1691, SACRAMENTO, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids July 24. CD 7/14.

▲† **Stanton-Reed Co.**, 816 W. 5 St., Los Angeles, Calif., CA. **$1,096,176**, B.O.Q. and public works office bldg. at Naval Air Station, Spec. 32650, NOY 71946. SAN DIEGO, CALIF. Dpt. Navy, San Diego, Calif. Bids July 1, awarded July 28. CD 7/30, under LB.

Ace Pipeline Constr. Co., 1312 W. First St., Pomona, Calif., LB. **$47,322**, installing swale water main replacements, SAN DIEGO, CALIF. City, Civic Center, San Diego, Calif. Bids July 29. CD 7/21.

L. B. Butterfield, 2035 Main St., San Diego, Calif., LB. **$247,545**, installing sanitary sewers in various streets, SAN DIEGO, CALIF. City, Civic Center, San Diego, Calif. Bids July 29. CD 6/3.

BUILDINGS

LOW BIDS AND CONTRACTS

Quiller Constr. Co., Inc., 8607 Santa Monica Blvd., Los Angeles, Calif., LB. **$346,160**, elementary SCHOOL at March Air Force Base, RIVERSIDE, CALIF. Housing & Home Finance Agency, 112 W. 9 St., Los Angeles, Calif. Bids July 29. CD 7/18.

▲ **Continental & Heller Constr. Cos.**, P.O. Box 2551, Sacramento, Calif., LB, **$1,101,000**, general contract, 1 story, **257,000** sq. ft., concrete, masonry state PRINTING PLANT, SACRAMENTO, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids July 29. CD 6/24.

Lawrence Constr. Co., 3020 V St., Sacramento, Calif., LB. **$309,746**, 40,000 sq. ft. ACADEMY for California Highway Patrol, SACRAMENTO, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids July 29. CD 7/9.

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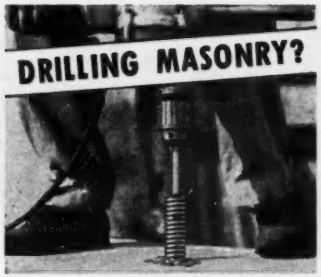

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CANADA

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Man., Winnipeg**—HANGAR—B.A. 9/3—Defence Constr. Ltd., 400 Kensington Bldg., Winnipeg, Man cantilever hangar at air force station, $1,000,000. Plans deposit $100. K. F. Hurst, c/o owner, regional engr.

BIDS ASKED—BUILDINGS

▲ **Ont., Collingswood**—SCHOOL—B.A. 8/28—Collingwood District Collegiate Institute Bd., N. C. Taylor secy. treas. Collingswood, district high school on 13½ acre site at south end of town, $1,000,000. Plans deposit $25. Shore & Moffat, 79 Queen St. E., Toronto, Ont., archts. CD 9/14/51.

N. S., Sydney—OFFICE—B.A. 9/10—G. F. Drummond, 355 McGill St., Montreal, Que., 2 story, bsmnt. 80x120 ft., concrete, structural steel, brick office for C.N.R. Telegraphs, 355 McGill St., Montreal, Que.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Marine Industries Ltd.**, 1405 Peel St., Montreal, Que. CA, Approx. $1,000,000, dredging in harbour, QUEBEC CITY, QUE. National Harbours Bldg., West Block, Ottawa, Ont. CD 10/21/46.

Royalmount Constr. Ltd., 1440 S. Catherine St. W., Montreal, Que., LB, $505,865, wharf repairs, extens., ST. ANGELE DE LAVAL, QUE. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. R. Blais, c/o owner, engr.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Foundation Maritime Ltd.**, 135 Lower Water St., Halifax, N. S., CA, $1,400,000, 2 story, high SHOOL, HALIFAX, N. S. Bd. School Comrs., 17 Brunswick St., Halifax, N. S. Awarded July 28. CD 11/1/51.

▲ **Angus Robertson Ltd.**, 57 Bloor St., W., Toronto, Ont., CA, $1,100,000, 1 story 500x300 ft. T-shaped FACTORY, 2 story, 60x200 ft., office, Eglinton Ave. E., TORONTO, ONT. Canada Foils Ltd., 7 Fraser Ave., Toronto, Ont. Bids July 16, awarded July 30. CD 7/9.

▲ **Anglin-Norcross Ontario Ltd.**, 57 Bloor St. W., Toronto, Ont., CA, $3,000,000, 15 story, L-shaped, steel frame, stone EXCHANGE bldg. on Adelaide St., TORONTO, ONT. Owner c/o Wood Fleming & Co., Ltd., Royal Bank Bldg., Toronto, Ont. Awarded July 29. CD 7/10.

Simon Glazer, 25 Carriere St., Hull, Que., CA, Approx. $500,000, 10 wood frame, brick APARTMENT HOUSES, HULL, QUE. Jules Jacques & Adrien Gregoire, 189 Principale St., Hull, Que. R. Richard, 58 Demoutgne St., Hull, Que., archt.

P. H. Braeudel, 370 39 Ave., Lachine, Que., CA. $620,000, 70 COTTAGES, LACHINE, QUE. Stoney Point Housing Ltd., 353 39 Ave., Lachine, Que.

▲ **Biron Constr. Co., Lt.**, 998 Cherrier St., Montreal, Que., CA, $1,250,000, 71 HOUSES and several commercial enterprises bldgs., VARENNES, QUE. J. A. Brunell, 10680 St. Charlet St., Montreal, Que.

Proposed Projects

WATER SUPPLY

Ark., Fort Smith—City, WW extens. $250,000. W. R. Holway, 302 E. 18 St., Tulsa, consult. engr. CD 3/17/48.

▲ **D. C., Wash.**—Distr. of Col., District Bldg., Wash., D. C., plans by Municipal Architects, Municipal Center 500-ton brick incinerator at Mt. Olivet Rd. and West Va. Ave. N. E., $2,000,000. CD 7/14/44.

▲ **Neb., Omaha**—Metropolitan Utilities Dist., 18 and Harney Sts., underground water reservoir near 36 and Center Sts. in Omaha Field Club grounds, $1,042,500. Burns & McDonnell Engrng. Co., 95 and Troost Sts., Kansas City, Mo., consult. engrs. CD 2/19.

Tex., Houston—City, City Hall, 900 Brazos St., Incinerators, No. 1, $350,000; No. 2, $300,000; No. 3, $310,000. W. E. White, city engr. CD 6/27/46.

SEWERS, WASTE DISPOSAL

▲ **Calif., Los Angeles**—**Los Angeles Co., Hall of Records, $179,000,000** bond election Nov. 4. countywide storm drainage system. W. M. Fox, c/o owner, engr.

Ill., Vienna—City, sewer lines and sewage disposal works, $190,000. Warren & VanPraag, 253 S. Park St., Decatur, consult. engr.

Mass., Chicopee—City, Hy. Dpt., City Hall, relining McKinstry Ave. sewer, $140,000.

Okla., Duncan—City, Duncan, addnl. sanitary sewer mains. $250,000. V. V. Long & Co., Colcord Bldg., Oklahoma City, consult. engr.

▲ **Tex., Beaumont**—City, City Hall, voted bonds, sewage disposal facilities. $6,250,000; sanitary sewer lines and feeder main. $250,000. CD 7/3.

BRIDGES

GEORGIA—State Hy. Dpt., Atlanta, Ga. Washington and Glascock Counties—bridge over Ageechee River, $100,000.

O., Springfield—City, Municipal Bldg., East Main St. grade elimination proj., $750,000. Alden E. Stilson & Assoc., 209 S. High St., Columbus, consult. engr. CD 11/14/45.

RHODE ISLAND—State, Dpt. P. Wks., State House, Providence,

Providence—bridge, Wilbur Rd. Bridge, Loisquiset Pike at Limerock. $175,000.

▲ **Tex., Houston**—City, City Hall, 900 Brazos St.. bridge across Buffalo Bayou. $1,000,000. W. E. White, city engr. CD 6/8/50.

STREETS AND ROADS

▲† **Colorado**—National Capitol Parks, Interior Bldg., Wash., D. C.

Mesa—road construction incl. 1,000 ft. tunnel, in Mesa Verde National Park, $1,000,000.

Mississippi—State Hy. Dpt., Jackson,

Washington Co.—four-lane highway between Leland and Greenville. $600,000.

Mo., Kansas City—City, Reed McKinley, dir. P. Wks., City Hall, wid'n., exten. 31 St. from Summit to Kansas State Line, $198,500; wid'n. Independence Ave. from Winner Rd. to Ewing Ave., $60,000; wid'n. Genesee St. from 12 to 16 Sts., $60,000. CD 4/10.

RHODE ISLAND—State, Dpt. P. Wks., State House, Providence,

Providence—highway, Old Hartford Pike from Chipmist Hill Rd. to Connecticut line, $450,000. road const., Eagle St., Atwells Ave. to Kingsley Ave. $372,000.

Warwick—road const., Forge and Ives Rds., Potowomut-Warwick, $220,000.

▲ **Tex., Houston**—City, City Hall, 900 Brazos St., street blacktopping program, $700,000; permanent type paving, street imprvs. $1,500,000; flexible street paving (shell or gravel base only), $500,000. W. E. White, city engr. CD 6/5/51.

EARTHWORK, WATERWAYS

▲† **California**—Bureau of Reclamation, Regional 2, Sacramento, Calif., plans underway for Solano Project incl.;

Monticello Dam—1,017 ft. long, 276 ft. high concrete arch dam in Putah Creek, at Devil's Gate.

Putah South Canal—38 mi. waterway from Putah Creek, from diversion dam to near Cordelia.

Putah Diversion Dam—650 ft. long, 26 ft. high, concrete and earth fill dam near Winters.

Terminal Reservoir—25 acre ft. holding reservoir near Cordelia.

Wasteways—two wasteways at Sweeney Creek and South of Vacaville.

Distribution and Drainage Systems—open lateral and concrete pipe from Putah South Canal to farm lands. $38,745,000. ($3,000,000 has been appropriated for plans only.) Legislation pending to determine whether the development should be part of Central Valley Project. CD 6/15/44.

Calif., San Jose—Santa Clara Valley Water Conservation Dist., 60 N. 2 St., $600,000 bond election Sept. 16, two cross-valley canals. G. W. Hunt, 60 N. 2 St., engr.

Missouri—Cul de Sac Levee Dist., c/o Circuit Court, St. Charles, Mo., enlargement and imprv. of Cul de Sac Levee on west bank of Missouri River north to Machens, Mo. and raise height to 40 ft. Approx. $600,000.

† **Nebraska**—U. S. Eng., 1709 Jackson St., Omaha, flood protection contr. at Blue River, near Seward. $150,000.

Tex., Pasadena—Jeff Fleming, Pasadena, earthwork, grading, drainage, filling, $110,000; landscaping, $100,000 for new cemetary off Spencer Hy.

Tex., Texas City—Town, drainage proj. (consists mostly closing up open ditches). $750,000. CD 9/13/50.

▲ **ONTARIO**—Hydro-Electric Power Comn. of Ontario University Ave., Toronto, second tunnel for Sir Adam Beck Generating Station, Niagara Falls, $114,000,000. CD 9/5/50.

AIRPORTS

† **Ariz., Goodyear**—STORM DRAIN—Dpt. Navy, San Diego, Calif., storm drain, Third Increment at Litchfield Naval Air Station, NOY 71106, Spec. 32660, $200,000.

▲† **N. J., Lakehurst** — AVIATION FACILITIES — Dpt. Navy Phila. Naval Base, Phila., Pa., additional aviation facilities, $2,500,000.

† **N. Y., Albany**—TERMINAL BLDG.—Civil Aeronautics Admin., Idlewild Airport, Jamaica, terminal bldg. at Municipal Express Airport. $700,000. CD 5/23/46.

† **Tex., Killeen**—HOUSING—U. S. Eng., 100 W. Vickery St., Fort Worth, family housing for Gray Air Force Base. Approx. $450,000.

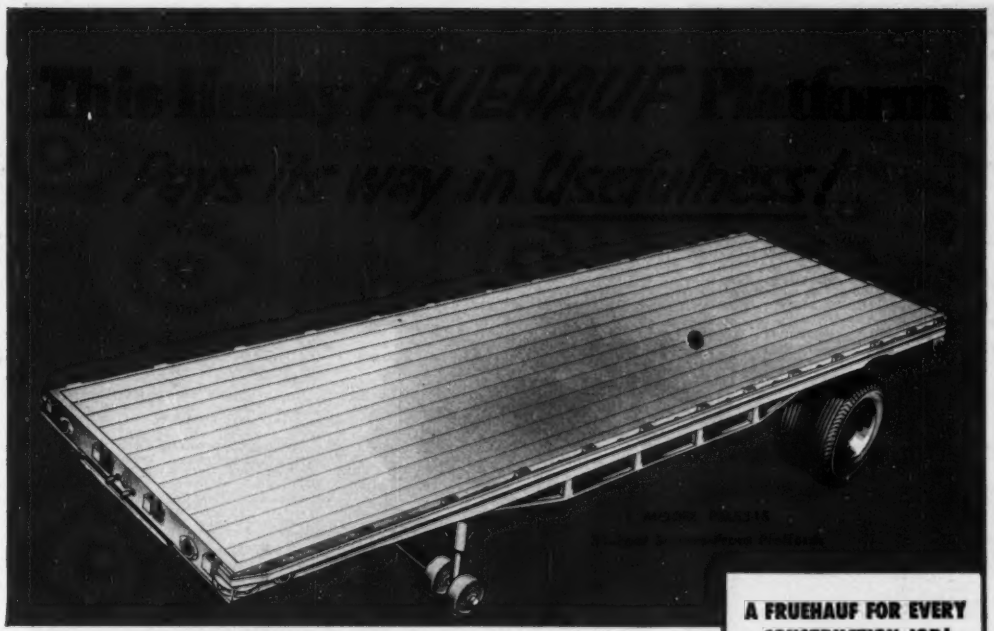
▲† **Tex., San Antonio**—ADMINISTRATION BLDGS.—Dpt. Air Force, The Pentagon, Wash. 25, D. C., admin. bldgs. to serve Brooks Aviation Medical School. $8,000,000.

▲† **Va., Chincoteague**—BARRACKS, etc.—Dpt. Navy, Fifth Naval Dist., Norfolk, Zone 11, seven 3-story barrack bldgs.; approx. 305,000 sq. yd. airfield and road paving, of concrete and flexible pavement at Naval Auxiliary Air Station. Sturgeon, Clark & Buhr, Midtown Bldg., Wards Corner, Norfolk, consult. engrs.

LATIN AMERICA

Mexico, Mexico City—Jose Maria Davila, Liverpool, 185-7, plans 8 story office. $750,000.

Mexico, Vera Cruz—Mid American Co., c/o Scott Barra, Apto. 420, Vera Cruz, tanic acid factory, $150,000.



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PUBLIC BUILDINGS

▲ **Calif., Berkeley**—CHEMISTRY LABORATORY—University of California, Administration Bldg., plans by Eric Mendelsohn & Michael A. Gallis, 627 Commercial St., San Francisco, Chemistry laboratory bldg. on campus, $1,200,000.

Calif., Calexico—SCHOOL—Calexico Union High School District, Calexico, Calexico High School, $762,096. Bowen, Rule & Bowen, 2835 Gilroy St., Los Angeles, Calif., consult. engr. CD 1/6/50.

Calif., Healdsburg—SCHOOLS Healdsburg High School Bd. Trustees, E. B. Christensen, principal, Healdsburg, $700,000 to $800,000 bond election, junior high school, new senior high school or temporary junior high school to be used as Senior High School. Falk & Booth, 9 Main St., San Francisco Calif., archts.

Calif., Redwood City—HOSPITAL WING—Sequoia Hospital District, Redwood City, $985,000 bond election Sept. 4, hospital wing.

Calif., San Jose—SCHOOL—Alum Rock Union Elementary School District, Thomas P. Ryan, supt., N. White Rd. San Jose, school for East Side, $450,000. CD 1/16/51.

▲ **Calif., San Marino**—SCHOOLS—San Marino School District, $3,250,000 bond election. Sept. 30, schools.

† **Calif., Twenty-Nine Palms**—TRAINING CAMP—Dpt. Navy, San Diego, Calif., non-potable water distr. sys. and potable storage, NOY 74038, Spec. 35073, $500,000; power transmission line, NOY 74033, Spec. 35068, $500,000; main electric substation, NOY 74037, Spec. 35092, $200,000; installing telephone system, NOY 74036, Spec. 35071, $200,000 all foregoing at Marine Corp Training Camp.

Conn., Bridgeport—COURT HOUSE ADDN.—Fairfield County Court House, court house addn., Golden Hill St. $750,000.

Conn., Middletown—EMPLOYEES—State P. Wks., Hartford, plans by Russell F. Hills, 130 Washington St., Hartford, 13 story, brick, steel, concrete employees bldg., Connecticut State Hospital, $550,000. CD 7/16.

Conn., New Canaan—SCHOOL—Town Bd. Educ., brick, steel, concrete high school, $300,000.

Conn., Stratford—SCHOOL—Town Bd. Educ., N. Parade St., plans by Andrew G. Patrick, 2503 Main St., Stratford 1 story, masonry school, Second Hill Lane area, $750,000 CD 11/14/51.

Fla., Crestwood—SCHOOL—Okaloosa Co., Bd. P. Instruction, Crestwood, plans by Norman P. Gross, Panama City high school, $700,000.

▲ **Idaho, Blackfoot**—CONVALESCENT BLDG., etc.—State Hospital South, Blackfoot, convalescent bldg., $500,000 employees' apartment, $300,000; utilities bldg. addn., $165,000; children's bldg., $100,000; adjunctive therapies bldg., $100,000; maintenance shop, $50,000.

Kan., Dodge City—AUDITORIUM—City, c/o C. L. Clinton, mayor, $385,000 bond election September 16, municipal auditorium, $785,000. Mann & Co., 201 E. Hutchinson St., archts. CD 2/20/46.

▲† **Ky., Fort Knox**—SCHOOL—U. S. Eng., 830 W. Broadway, Louisville, armored school bldg., 2 ordnance and tank repair shops, 12 tank battalion maintenance shops, 2 new tank firing ranges, new electric facilities, 6 deep water wells, $1,410,000.

Mass., Boston—FIRE STATION—City, Fire Dept., 115 Southampton St., Roxbury, plans by John M. Gray Co., 175 High St., fire station, Fort Hill Square, $150,000.

▲ **Mass., Boston**—HOUSING—Boston Housing Auth., 230 Congress St., plans by Thomas F. McDonough, 25 Huntington Ave., PHA 2-19, housing, Bromley Park, Roxbury. $10,250,000. Edouard Dube, 120 Tremont St., consult. engr. CD 4/23/51.

Mass., Cambridge—HOSPITAL—Cambridge City Hospital, 1493 Cambridge St., plans by James H. Ritchie & Assoc., 135 Clarendon St., Boston, hospital addn., alterations. Approx. $400,000. CD 12/23/46.

Mass., Eston—SCHOOL—Town, State Dpt. Weston, plans by Kilham, Hopkins & Greeley, 9 Arlington St., Boston and Hugh A. Stubbins, Jr., 103 Pleasant St., Lexington, assoc. archts., elementary school. Approx. $300,000. CD 7/17.

Mass., Freetown—SCHOOL—Town, John Rolfe, supt., Dighton, plans by Israel T. Almy, 56 N. Main St., Fall River, brick, steel, concrete Consolidated School addn. $300,000.

Mass., Lawrence—EXPERIMENT STATION—State, Dpt. P. Health, State House, Boston, H-401 bldg. Experiment Station. $402,000. Charles A. Maguire & Assoc., 294 Washington St., Boston, consult. engrs. Tighe & Bond, 189 High St., Holyoke, engrs. CD 2/27.

Mass., New Bedford—SCHOOL—Town, State Dpt. Educ., 200 Newbury St., Boston, plans by Thomas F. McDonough, 25 Huntington Ave., Boston, E-306, brick, steel, concrete School, Textile Institute, Purchase St. $750,000. Frank J. Leary, 197 Rockland St. S., Dartmouth, and Raymond M. Stowell, Ned Point Rd., Mattapoisett, consult. engrs. CD 5/27.

Mass., Randolph—SCHOOL—Town, School Dpt. plans by Harry J. Korsland, 506 Washington St., Norwood, brick, steel, concrete, Charles G. Devine School, $475,000. Martin E. Keane, 32 Faxfield St., West Roxbury, Mass., elec. engr. CD 9/5/51.

▲ **Mass., Somerville**—HOUSING—Somerville Housing Auth., 139 Alewife Brook Parkway, plans by Abbott Assoc., 131 State St., Boston, 248-unit housing $3,500,000. CD 12/14/45.

Mass., Wilmington—SCHOOL—Town, School Dpt., Wilmington, plans by Thomas Hixon, 1150 Commonwealth Ave., Boston, Mass., 1 story brick, steel, concrete school. $400,000. Albert Goldberg, 739 Boylston St., Boston, struct. engr. CD 6/18.

Minn., Gibbon—SCHOOL—Bd. Educ., R. Klukas, clk., Gibbon, defeated bonds July 15, school addn. $445,000. H. H. Swanson, 500 Sexton Bldg., Minneapolis, archt.

▲ **Neb., McCook**—HIGH SCHOOL—Bd. Educ., McCook, plans by J. W. Radotinsky, 1401 Fairfax Trafficway, Kansas City, Kan., high school. $1,375,000. CD 6/17.

▲† **N. J., Fort Dix**—FIRE STATION, etc.—Dpt. Army, 121 N. Broad St., Phila., Pa., plans by Fridy, Gauker Truscott & Fridy, 1321 Arch St., Phila., Pa., fire station, chapel and officers' mess, $1,000,000.

† **N. J., Fort Monmouth**—GUARD HOUSE—U.: S. Eng., 80 Lafayette St., New York 13, N. Y., plans by Ziegler, Childs & Paulsen, 921 Bergen Ave., Jersey City, guard house, $100,000-$500,000.

▲ **N. M., Albuquerque** — HOSPITAL — Bernalillo Co., Albuquerque and Bureau of Indian Affairs, Dpt. Interior, Interior Bldg., 19 and C Sts., N. W., Wash. 25, D. C. 233-bed hospital. $3,250,000.

† **Nev., Reno**—EXPERIMENTAL LABORATORY—Bureau Mines, Dpt. Interior, 870 Market St., San Francisco, Calif., plans by DeLongschamps & O'Brien, Gazette Bldg., experimental laboratory at University of Nevada. $750,000. CD 3/28.

N. D., Grand Forks—COURT HOUSE, JAIL—Grand Forks Co., Grand Forks, plans by Wells & Denbrook, Grand Forks, court house and jail addn. $350,000.

O., Brookville — HIGH SCHOOL — Bd. Educ., Robert Warnke, supt., Brookville, high school. $400,000-$500,000.

O., Cleveland—SCHOOL—Bd. Educ., 1380 E. 6 St., Zone 14, plans by Arthur F. Baer, c/o owner, George Washington Carver School, E. 49 St. at site of Old Central Junior High School. $600,000. CD 11/14/50.

Okla., McAlester—SCHOOL—Bd. Educ., McAlester, plans by Harold Flood, Ardmore, South McAlester elementary school. $350,000.

▲ **Okla., Tulsa**—COURT HOUSE Tulsa Co., Tulsa, voted bonds, county court house, $4,250,000. Black & West, Mutual Bldg., Tulsa, archts. CD 6/17.

▲ **Ore., Salem** — SCHOOL — Marion Co. School Dist., Salem, plans by Freeman, Hayslip & Tuft, 2040 S. W. 3 St., Portland, high school, $3,485,500. CD 9/21/50.

Pa., Bethel—SCHOOL—Bethel Municipal Auth., Bethel, plans by Charles M. & Edward Stotz, 801 Bessemer Bldg., Pittsburgh, grade school. $300,000.

▲ **Pa., Connellsville**—HOUSING—Connellsville Housing Auth., Connellsville, plans by Marks & Simboli, 605 Hardy and Hays Bldg., Pittsburgh, 3 story, bsmnt., brick veneer 125-family Housing Proj. Penn. 25-1. $1,250,000.

▲ **Pa., Natrona**—HIGH SCHOOL, etc.—School Dist. of Harrison-Brackenridge Joint School Dist., Natrona, plans by John H. Phillips, 23 Briar Cliff Rd., Ben Avon Heights, Pittsburgh, high school and field house. $800,000; at Brackenridge; 2 story, bsmnt., brick, steel frame, Junior High school, $1,000,000 at Natrona Heights, Harrison Twp. CD 2/6/48.

†**Pa., Pittsburgh**—LABORATORY—Bureau of Mines, Dpt. Interior, 4800 Forbes St., 1 story chemistry laboratory addn. $200,000.

Pa., Salisbury—HIGH SCHOOL—Joint School Dist. of Salisbury-Elk Lick, Salisbury, plans by Walker Mong, 226 E. Church St., Somerset, 1 story 170x250 ft., U-shaped, steel frame, brick, concrete high school. $450,000.

Pa., Stowe—SCHOOL—West Pottsgrove Twp. School Bd., Stowe, plans by W. Marshall Hughes, 1015 Lancaster Ave., Reading, elementary school. $300,000.

S. C., North Charleston—SCHOOL—School Dist. 4, Gordon H. Garrett, supt., North Charleston, plans by Halsey & Cummings, Champney's Alley, Charleston, Dorchester Terrace Elementary School. $500,000. CD 5/7.

S. C., Port Royal—SHIPPING TERMINAL—South Carolina State Ports Auth., 1 Vendue Range, Charleston, shipping terminal. $225,000.

▲ **Tex., Tyler**—TUBERCULOSIS HOSPITAL—Bd. for Texas State Hospitals & Special Schools, 45 and Lamar Sts., Austin, plans by Walter C. Moore, 45 and Lamar Sts., Austin, 800-bed State Tubercular Hospital. $2,000,000. CD 8/25/48.

Va., Fairfax—HIGH SCHOOL—Fairfax Co. School Bd., Fairfax, plans by Dixon & Norman, 1103 E. Main St., Richmond, Mt. Vernon High School. $300,000. CD 6/6/50.

▲ **Va., South Norfolk**—HIGH SCHOOL—South Norfolk School Bd., Municipal Bldg., plans by A. Ray Pentecost, Jr., Nick Wright Bldg., Norfolk, 2 story high school. $1,000,000.

† **Wash., Fort Lewis**—HEATING PLANT, etc.—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, plans by J. L. Holmes & Assocs., Times Square, Seattle, Zone 1, heating plants; ordnance ammunition area, C. C. Arnold, Arctic Bldg., Seattle, Zone 4, consult. engr. CD 7/27/51.

Wash., Vancouver—SCHOOL ADDN.—School Bd., Vancouver, plans by D. W. Hilborn, 307 E. 10 St. Shumway junior high school addns., $415,876. CD 7/11.

▲ **Wis., Madison**—CITY HALL—City, City Hall, Madison and Dane Co., Court House, Madison, plans by Holabird & Root & Burgee, 180 N. Wabash Ave., Chicago, Ill., city-county bldg., $8,000,000-$10,000,000. CD 2/29.

N. B., Newcastle—SCHOOL—Bd. School Trustees, Newcastle, school. $500,000.

▲ **N. B., St. John**—TRAINING CENTER—C. J. Connolly, engr. Defence Constr. Ltd., 1032 Gottingen St., Halifax, large military training centre between St. John and Fredericton, Incl. barracks, messes, officer's quarters, supply bldgs., workshops, water and sewer system, heating systems, etc., $25,000,000.

COMMERCIAL BUILDINGS

▲ **Calif., Los Angeles**—OFFICE—G. Harvey Mydland Co., Subway Terminal Bldg., Los Angeles, plans by James R. Friend, Kress Bldg., Long Beach, 6 story, reiu.-con. office at Adams Blvd. and Grand Ave., $4,332,000. George V. Norikoff, 7625 Crenshaw Blvd., Los Angeles, Calif., consult. engr.

Del., Wilmington—SHOPPING CENTER—Clement E. Merowit, 100 Laurel Lane, Forest Brook Glen, Wilmington, shopping center. $400,000.

▲ **D. C., Wash.**—ANNEX—Acacia Mutual Life Insurance Co., 51 Louisiana Ave. N.W., Wash., D. C., plans by Shreve Lamb & Hermann Assocs., 11 E. 44 St., New York, N. Y. 6 story annex, $3,000,000.

Ill., Chicago—APARTMENT—Isador Deemar, c/o Albert Comm, archt., 1607 Howard St., Chicago. 26, Ill., 12 story 48-unit apartment bldg. $500,000.

Ill., Lockport—DORMITORY—Lewis College of Science & Technology, plans by H. T. Liebert, 5112 N. Kenmore Ave., Chicago, Ill., 3 story, dormitory at Lewis Airfield, $300,000.

▲ **Ia., Des Moines**—OFFICE—Central Life Assurance Co. W. F. Poorman, Pres., 211 Jewett Bldg., Des Moines, plans by Wetherell & Harrison, 506 Shops Bldg., Des Moines, office. $2,000,000.

▲ **Ky., Harlan**—HOSPITAL—United Mine Workers Welfare Fund, c/o Sherlock, Smith & Adams, archts., 301 Washington Ave., Montgomery, Ala., hospital. $2,000,000.

Ky., Hazard—HOSPITAL—United Mine Workers Welfare Fund, c/o Sherlock, Smith & Adams, archts., 301 Washington Ave., Montgomery, Ala., hospital. $900,000.

Ky., Middlesboro—HOSPITAL—United Mine Workers Welfare Fund, c/o Sherlock, Smith & Adams, archts., 301 Washington Ave., Montgomery, Ala., hospital. $800,000.

Ky., Whitesburg—HOSPITAL—United Mine Workers Welfare Fund, c/o Sherlock, Smith & Adams, archts., 301 Washington Ave., Montgomery, Ala., hospital. $900,000.

▲ **Md., Silver Springs**—PHYSICS LABORATORY—Johns Hopkins University, Applied Physics Laboratory, 8621 Georgia Ave., Silver Springs, plans by Voorhees, Walker, Foley & Smith, 101 Park Ave., New York, N. Y., applied physics laboratory, near Rte. 29. $1,800,000.

▲ **O., Cleveland**—PARCEL POST ANNEX, GARAGE—New York Central System, St. Clair Ave. and W. 3 St., plans by Friedman, Alschuler & Sincere, 223 W. Jackson Blvd., Chicago, Ill., parcel post annex and garage at W. 9 St. and Lakefront for lease to United States Post Office, Cleveland. $7,500,000. CD 6/26

O., Rocky River—HOUSES—Fairhill Const. Co., 20350 Center Ridge Rd., 14 houses on Nelson Park Dr. $575,000.

Pa., Pittsburgh—HOTEL—Hotel Shields Greene, c/o Michael A. Lazorcak, archt., 1713 Carson St., 4 story, 3 sub-floors, steel frame, brick, tile hotel, $450,000.

Pa., Pittsburgh—CHURCH—Sixth United Presbyterian Church, N. Hiland and Stalton St., plans by H. Hensel Fink, 1701 Arch St., Phila., church alterations and addns. $600,000.

Tex., Austin—REFECTORY BLDG.—Lutheran Concordia College, Rev. George Bete, Pres., Cameron Rd., plans by Carl Staats, 1704 Exposition Bldg., refectory bldg., dining hall. $300,000.

Tex., Galveston—CHURCH—First Baptist Church, 822 Tremont St., plans by Easterwood & Easterwood, 501 N. P. Anderson Bldg., Fort Worth, 3 story brick, hollow tile, church, rein.-con. pier and beam fdn., steel frame, air-conditioned, gas fired heating plant. $650,000. L. Kamto, N. P. Anderson Bldg., and R. W. Smith, Texas & Pacific Passenger Station, consult. engrs. all foregoing in Fort Worth.

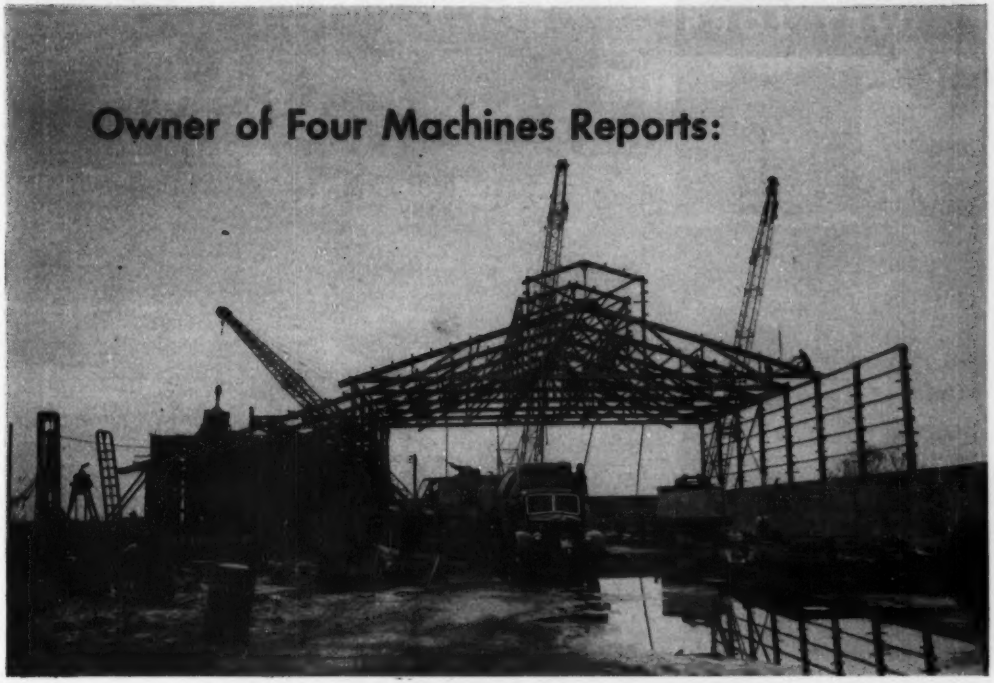
▲ **Tex., Houston**—DWELLINGS—James E. Lyon, The Builder, 2023 S. Shepherd St., Unit 1, Sec. 1, 40 frame dwellings, $425,000; Unit 1, Sec. 2, 30 masonry dwellings, $615,000; Unit 2, Sec. 1, 55 frame with masonry trim dwellings, $600,050; Unit 2, Sec. 2, 38 one story-masonry dwellings, $570,000; Unit 3, Sec. 1, 48 frame, masonry dwellings, $545,000 all foregoing in an extended area of Spring Oaks Addn.

Tex., Houston—DWELLINGS—Prokop Development Co., c/o L. W. Prokop, 7015 Long Point Rd., 30 dwellings, $300,000; 33 frame dwellings, concrete slab fdn., central heating, $340,000; 40 frame dwellings, concrete slab fdn., central heating, $365,000, in an area north of Pine Terrace No. 2.

▲ **Tex., Houston**—DWELLINGS—A. G. & L. L. Ray 4640 Holmes Rd., plans by Perry Johnston, 3906 Main St., Job No. 1, 100 dwellings $650,000; Job No. 2, 85 dwellings, $550,000; Job No. 3, 115 dwellings, $725,000; Job No. 4, 125 dwellings, $840,000; Job No. 5, 75 dwellings, $515,000; Job No. 6, 50 dwellings, $350,000 in Lake Forest area.

Tex., Kilgore—STUDENT UNION—Kilgore Junior College, Kilgore, plans by Jim Dowdy, Henderson, 2 story student union bldg. $300,000. CD 6/4.

▲ **Tex., Lone Star**—DWELLINGS—Mike Matise & George M. Kelley, Tyler, Job No. 1, 25 dwellings, concrete slab fdn. $300,000; Job No. 2, 40 frame dwellings, concrete slab fdn. $400,000; Job No. 3, 30 brick dwellings, concrete slab fdn., $340,000; Job No. 4, 35 brick frame dwellings, concrete slab fdn., $375,000; Job No. 5, 45 one-store redwood and brick trim dwellings, concrete slab fdn. $450,000; Job No. 6, 31 frame, brick dwellings, concrete slab fdn. $350,000; 14-story masonry shopping center.



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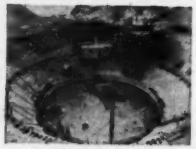

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▲ **Tex., Lubbock**—OFFICE—Great Plains Insurance Co., 2347 19th St., plans by David S. Castle, 1082½ N. 1st St., Abilene, 20 story bsmnt., 147,053 sq. ft., white stone and brown granite trim, Alt. glass with trim on steel strips, office bldg., concrete slab floors, rein.-con. fdn., central heating, air-conditioning, $2,750,000.

Tex., **Midland**—MOTEL—Triple D Motel, c/o Dodson Bros., Wichita Falls, 70-unit brick, stone motel, air-conditioning. $310,000.

▲ **Tex., Pasadena**—DWELLING—L. C. Kirby Development Co., c/o John Wilmeth, Kirby Bldg., Houston, Job 2, 40 dwellings, $400,000; Job 3, 35 dwellings, $350,000; Job 4, 45 dwellings, $425,000 in portion of Revelon Terrace.

Tex., **San Antonio**—COMMUNITY CENTER—Jaffe, Martin & Hirschfeld, 202 Winewood Dr., plans by Shoop & Roberts, 122 W. Olmos St., 14-unit community center. $300,000.

▲ **Tex., San Antonio**—DWELLINGS—Jaffe & Martin & Assoc., Milam Bldg., 40 frame dwellings, concrete slab, $325,000; 50 frame dwellings, $400,000; 45 frame dwellings, on concrete slab, $375,000, foregoing in Marina Village.

Tex., **San Antonio**—POST OFFICE—J. M. Odom, Box 774, Austin, plans by Jessen, Jessen, Milhouse & Greeven, 2816 N. Guadalupe St., parcel post station and post office bldg. unit. Approx. $500,000. Frank T. Drought, 117 W. Pecan St., consult. engr. CD 7/17.

Va., **Wise**—HOSPITAL—United Mine Workers Welfare Fund, c/o Sherlock, Smith & Adams, archts., 301 Washington Ave., Montgomery, Ala., hospital. $600,000.

W. Va., **Elkins**—DORMITORY—Davis and Elkins College, Elkins, 3 story, bsmnt., 36x120 ft., brick, stone girls dormitory, $400,000.

▲ **Ont., Toronto**—HOUSES, etc.—Owner, c/o John Penturn & Son, 890 Eglinton Ave. W., 200 houses and shopping center in Etobicoke Twp. west of city limits, $2,000,000.

▲ **Que., Hull**—HOTEL—Standish Hotel Co., J. P. Maloney, owner, Main St., Hull, plans by W. E. Noffke, 46 Elgin St., Ottawa, Ont., 5 story, 100-room, stone, brick hotel. $1,000,000.

INDUSTRIAL BUILDINGS

Ala., Abbeville—PLANT—Pepperell Mfg. Co., 160 State St., Boston, Mass., plans by Robert & Co. Assocs., 96 Poplar St., N.W., Atlanta, Ga., plant, $600,000.

▲ **Ariz., Florence**—REFINERY—Proven Oil & Refining Co. c/o L. M. Glasco, M & W Tower Bldg., Dallas, Tex. 50,000 bbl. daily capacity gasoline refinery. $17,937,000.

Calif., Benicia—SHOP—Yuba Mfg. Co., Balfour Bldg., San Francisco, shop, $360,000.

Ill., Chicago—FACTORY—Perfection Screw Products Co., 1105 S. Washtenaw St., plans by Mark D. Kalischer, 23 E. Ohio St., Chicago, 4, Ill. 40,000 sq. ft. factory, 47 and Richmond Sts. $400,000.

Ill., Kankakee—FACTORY—The Simonize Co., 2100 S. Indiana Ave., 1 story, 50,000 sq. ft., steel frame, factory, $500,000.

N. J., Camden—WAREHOUSE—Owner c/o Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., warehouse, $100,000.

N. Y., Brooklyn—BREWERY—Joseph Schlitz Brewing Co., 193 Melrose St., plans by Alvin E. Harley, 153 E. Elizabeth St., Detroit, Mich., 6 story brewery alterations at 16-44 George St. $538,000.

N. C., Mt. Airy—PLANT—Standard Mfg. Co., Mt. Airy, plant addns. $100,000.

Pa., Erie—STEEL MILL—Interlake Iron Co., Union Commerce Bldg., Cleveland, O., 1 story steel mill Exp. $250,000.

▲ **Pa., Pittsburgh**—LABORATORIES—Westinghouse Electric Corp., Union Bank Bldg., plans by Voorhees, Walker, Foley & Smith, 101 Park Ave., New York, N. Y., research laboratories, Churchill Boro. $1,000,000.

Tex., Dallas—SHOPPING, and STORAGE—Haggar Pants Co., 6123 Lemmon St., 25,000 sq. ft. shipping and storage bldg., $150,000. Stephenson, Jordan & Harrison, 6123 Lemmon St., consult. engrs. CD 2/28/47.

Tex., Goldsmith—PUMP STATION—Gulf Oil Corp., c/o Production Div., Life of America Bldg., Fort Worth, addnl. field pump station. $200,000. Rayburn M. Hamilton, 1705 W. Gray St., Houston, consult. engr.

Tex., Hendricks—PUMP STATION—Gulf Oil Corp., c/o Production Div., Life of America Bldg., Fort Worth, addnl. field pump station and supply well. $225,000. Rayburn M. Hamilton, 1705 W. Gray St., Houston, consult. engr.

W. Va., Clarksburg—WAREHOUSE—General Storage Co., Clarksburg, rebuilding warehouse, $500,000.

W. Va., Fairmont—PLANT—Westinghouse Electric Corp., Fairmont, 2 story, 150x240 ft., brick, concrete, steel frame mfg. plant, $600,000.

Wis., Rhinelander—PLANT—Cleary Milk & Ice Cream Co., Rhinelander, plans by G. H. Buetow, 1931 University Ave., St. Paul, Minn., milk and ice cream plant, $150,000.

Ont., Hamilton—SALES AND SERVICE—Dei Bodkin Motors Ltd., King and Belmont Sts., 112x50 ft., concrete, block, stone, brick sales and service, $200,000.

▲ **Ont., Toronto**—PLANT—Dominion Bridge Co., Ltd., 1139 Shaw St., structural steel fabricating plant, 30 acre site in North York Twp. near Jane St. and Trethewey Dr., $10,000,000.

UNCLASSIFIED

Ark., Little Rock—TELEVISION STATION—Arkansas Radio and Equipment Co., 112-14 E. Capitol Ave., television station, $729,680. Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engrs.

Ark., Little Rock—TELEVISION STATION—Arkansas Television Co., 119 E. Capitol St., Little Rock, television station, $830,630. A. Earl Cullum Jr., 4710 Lemmon Ave., Dallas, Tex., consult. engr.

Ariz., Phoenix—TELEVISION STATION—KTAR Broadcasting Co., 711 Heard Bldg., 16 N. Central Ave., Phoenix, television station, $512,600. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr.

Calif., Long Beach—GAS PIPELINE—City, 205 E. Broadway, approx. 10½ mi. 14-in. steel natural gas pipeline, $600,000. M. A. Nichklan & Co., 2360 American Ave., Long Beach, consult. engr. Jesse Gilkerson, c/o owner, engr. CD 12/6/44.

Calif., Long Beach—SEAWALL—City, 205 E. Broadway seawall from Los Angeles River Channel to Rainbow Pier, $750,000. CD 12/6/44.

▲ **Colorado**—GAS PIPE LINE—Western Slope Gas Co., c/o Public Service Co. of Colorado, 5 and Champa Sts., Denver, gas pipe line in Rio Blanco, Garfield and Mesa Counties, $1,362,800.

Conn., Hartford—TELEVISION STATION—Travelers Broadcasting Service Corp., 26 Grove St., Hartford, television station, $608,900. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engr.

Conn., New Britain—TELEVISION STATION—New Britain Broadcasting Co., 213 Main St., television station, $323,880. George C. Davis, Munsey Bldg., Wash., D. C., consult. engr. CD 5/2.

▲ **Fla., Miami**—TELEVISION STATION—Isle of Dreams Broadcasting Corp., 600 Biscayne Blvd., Miami, television station, $1,259,950. M. W. Garrison, 1519 Connecticut Ave. N. W., Wash., D. C., consult. engrs.

▲ **Fla., Miami**—TELEVISION STATION—Miami Broadcasting Co., Du Pont Bldg., 169 E. Flagler St., Miami television station, $1,246,680. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engr.

Fla., Miami Beach—TELEVISION STATION—WKAT Inc., 1759 N. Bay Rd., Miami Beach, television station, $428,000. James C. McNary, Natl. Press Bldg., Washington, D. C., consult. engr.

Fla., St. Petersburg—TELEVISION STATION—City, Box 240, television station, $328,500. James C. McNary, Natl. Press Bldg., Wash., D. C., consult. engr.

Fla., Tampa—TELEVISION STATION—Orange Television Broadcasting Co., Box 2940, Tampa, television station, $591,600. Weldon & Carr, 1605 Connecticut Ave. N. W., Wash., D. C., consult. engr.

Fla., Tampa—TELEVISION STATION—Tribune Co., Lafayette and Morgan Sts., Tampa, television station, $961,880. M. W. Garrison, 1519 Connecticut Ave. N. W., Wash., D. C., consult. engr.

▲ **Ill., Chicago**—AMPHITHEATRE—Chicago Park District, 425 E. 14 St., Chicago, Zone 5, amphitheatre at south side of Grant Park, $2,500,000. CD 6/11/45.

Ill., Harrisburg—TELEVISION STATION—Turner-Farrar Assoc., 214½ W. Poplar St., Harrisburg, television station, $167,190. Kear & Kennedy, 1302 18 St. N. W., Wash., D. C., consult. engr.

Ill., Peoria—TELEVISION STATION—Peoria Broadcasting Co., 212 S. Jefferson St., Peoria, television station, $550,470, Craven, Lohnes & Culver, Munsey Bldg., Wash., D. C., consult. engr.

Ia., Cedar Rapids—TELEVISION STATION—American Broadcasting Stations, Inc., Paramount Theatre Bldg., Cedar Rapids, television station, $509,760. M. W. Garrison, 1519 Connecticut Ave. N. W., Wash., D. C., consult. engrs.

Ia., Des Moines—TELEVISION STATION—Central Broadcasting Co., 1002 Brady Court, Des Moines, television station, $676,120. A. D. Ring & Co., Munsey Bldg., Wash., D. C., consult. engr.

▲ **Ia., Storm Lake**—POWER EXPANSION—Iowa Public Service Co., 502 6 St., Sioux City, power expansion incl. enlargement of power bldg., generating equipment, $2,700,000.

† **N. J., Fort Monmouth**—ELECTRIC REHABILITATION—U. S. Eng., 80 Lafayette St., New York 13, N. Y., electric rehabilitation. $100,000-$500,000. A. C. Wood Assocs., Inc. Stock Exchange Bldg., Phila., Pa, consult engr

Oklahoma—SUB-STATION—K. A. M. O. Electric Cooperative, vicinity, four electric sub-stations, Craig Co. $100,000. W. R. Holway, 302 E. 18 St., Tulsa, consult. engr.

Okla., Okay—PARK, etc.—State Planning Board, Capitol, Oklahoma City, plans by Black & West, Mutual Bldg., Tulsa, Negro Park, cabins and resort on Fort Gibson Lake, near here. $500,000.

Texas—RURAL DISTRIBUTION LINES—Floyd County Rural Electric Co-operative, Floydada, 50 mi. rural distr. line 50 irrigation pumps, sys. imprvs., previously approved const., Floyd Co. $370,000. REA allot. CD 2/28.

▲ **Texas**—PIPE LINE—Mid-Valley Pipe Line Co., c/o E. F. Merrell, pres., Longview, 114 mi. 20 in. crude oil pipe line, Wortham to Longview. $4,500,000.

Tex., Houston—PARKS, etc.—City, City Hall, 900 Brazos St., parks, recreation facilities and playgrounds. $500,000. W. E. White, city engr. CD 11/22/44.

Tex. Texas City—LIGHTING SYS, etc.—Town, Texas City, expansion street traffic lighting sys. $75,000; exten. street lighting sys. $75,000.

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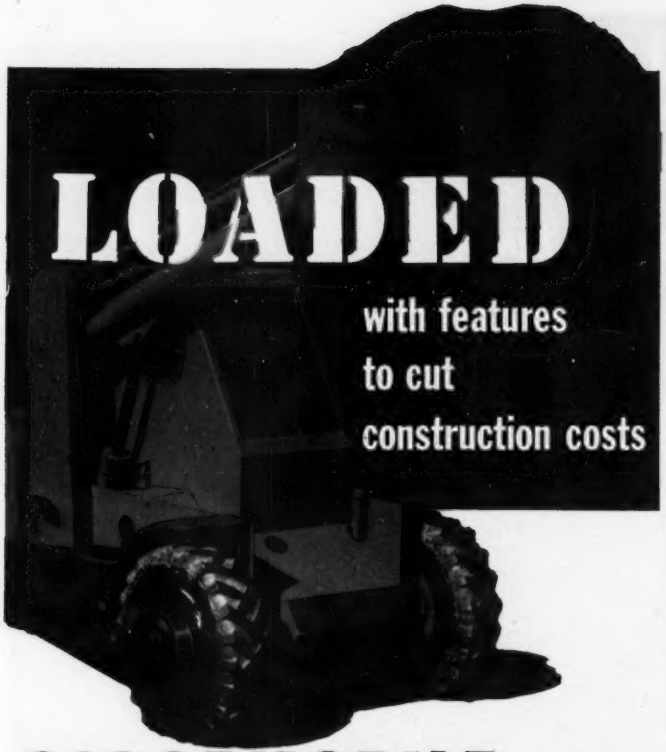

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Liability of engineer for defective plans

The owner of a garage employed an engineer to prepare plans specifications for a heating system of sufficient size to heat a building to temperature of 70 deg, and to supervise the work. Plans were prepared and the contract for the work was awarded at $4,602. Upon the completion of the work it was found that the building was inadequately heated. It was then discovered that the engineers in preparing the plans had made an error, as a result of which one heating unit had to be relocated and three additional units installed. This additional work cost $1,403 and the owner sued the engineers for that amount.

The trial court found that had the plans been drawn correctly originally, the cost of the installation would have been $183 less than the cost of the two jobs. This increase was due to an increase in costs of labor and materials between the dates of the original and final work.

The engineers did not guarantee that the system could be installed for any specified sum. The additional plans prepared by the engineers constituted a full, although delayed performance of their contract, the court held, also that the only damage that the owner suffered was the increased cost of the work in the amount of $183, for which the engineers were held liable. Such performance coupled with making good the loss occasioned by their neglect entitled the engineers to the balance of their fee.[3]

The agreed fee was $460 or 10% of the cost of the work under the original plans and specifications. This fee was not increased either by preparation of the additional plans or by the increase in the total cost of the heating system.

The court, in discussing the measure of damages to be applied, stated: "Compensation is the basic principle of damages.[3] For breach of contract the injured party is entitled to be compensated for losses which are the natural consequences and proximate result of the breach.[3] The purpose of such compensation is to place the injured party in as good a position as that in which full performance would have placed him.[4] He is not entitled because of a breach to be put in a better position had the contract been fully performed.[5]

"We have found no case squarely in point with the present one, but

applying the general principles of damages above stated, we conclude that the judgment of the trial court was correct."

(1) Henry R. Robb, Inc. v Urdahl et al., 78 A. 2d 387, Municipal Court of Appeals, District of Columbia, Jan. 31, 1951.
(2) Miller v Robertson, 266 U.S. 243, 45 S. Ct. 72, 69 L. Ed. 265.
(3) Thompson v Rector, 83 U.S. App. D.C. 371, 170 Fed. 167.
(4) Fleming v Twine, 58 A. 2d 498.
(5) Clarke v Cleckley, 55 A. 2d 287.

Damages for delays

The U. S. Court of Claims has just settled a case relating to liquidated damages for delays that has been in the courts for 15 years.

A contract for a government project provided for liquidated damages for delayed performance at the rate of $200 per day. An extension of time had fixed the date of completion at Dec. 30, 1936. At that time the project was 99.6% complete. The government refused to accept the work on that date, nor even on Feb. 27, 1937, when the work was 99.9% complete. The work was finally accepted on March 17, 1937, and the contractor was penalized for delayed performance for 77 days amounting to $15,400.

The Comptroller General excused 21 days of delay, thus reducing the liquidated damages to $11,200. The contractor brought an action to recover the sum so retained as liquidated damages for delayed performance.

The Court of Claims now has allowed the contractor a recovery on the ground that on the date from which the liquidated damages was computed the work was 99.6% complete and that only minor adjustments remained. The work remaining did not interfere with the occupancy of the houses.

The court in its opinion stated: "Two hundred dollars a day was a severe penalty for so slight an asserted delinquency and our observation of other cases tells us that it is not customary to draw the line so strictly. The refusal, which we hold unjustified, of the government to accept the project on Dec. 30, 1936, subjected the contractor, not only to the liquidated damages discussed above, but to continue expenditures for coal, light, power and fire insurance in the amount of $2,454. The plaintiff may recover this amount."[1]

(1) Continental Illinois Nat. Bank & Trust Co. v United States. U. S. Court of Claims, Jan. 8, 1952, 101 F. Supp. 755.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)

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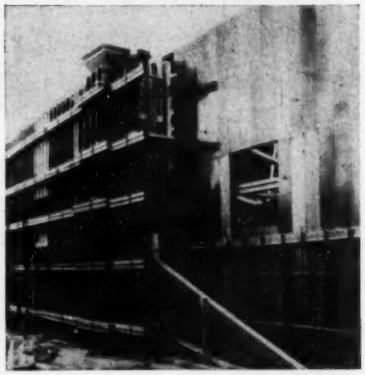

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This book is addressed to architects and engineers rather than to lawyers. Its purpose is to help architects and engineers in the conduct of their business operations.

Principal subjects covered are the state laws controlling the practice of architecture and engineering, relations between partners, relations with owners, powers of architects and engineers as agents of an owner, limits on their decisions, and their rights and liabilities when functioning as architect or engineer on a particular job.

The 55 pages given over to license laws contain much information of value to engineers or architects whose practice extends beyond the borders of a single state. Limits on practice by corporations are discussed in detail.

A valuable feature of the book is classification of the legal decisions bearing on each subject by states, so that when question is raised as to such a matter as the finality of an engineer's decision concerning the provisions of a contract, the decisions of courts in the state in which that contract is being carried out can be located easily.

U. S. book on prestressing

PRESTRESSED CONCRETE STRUCTURES—By August E. Komendant. 261 pp. McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y., Toronto and London. $6.

First of its kind to be published in this country, this book on design and construction of prestressed concrete structures is much simpler to understand than other texts published to date in English. It may not answer all the questions that engineers can ask about prestressing, but few books on any subject achieve this distinction.

The author gained his firsthand experience with prestressed concrete in Germany. Since coming to the U.S. he has studied prestressing requirements in this country so that the book reflects both of these viewpoints as well as those of the various European experts.

The book contains four lengthy chapters. Chapter 1 presents the principles of prestressing and the

(*Continued on page 146*)

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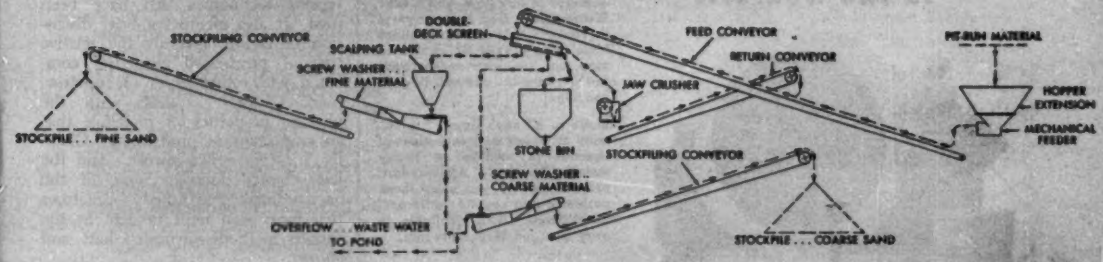

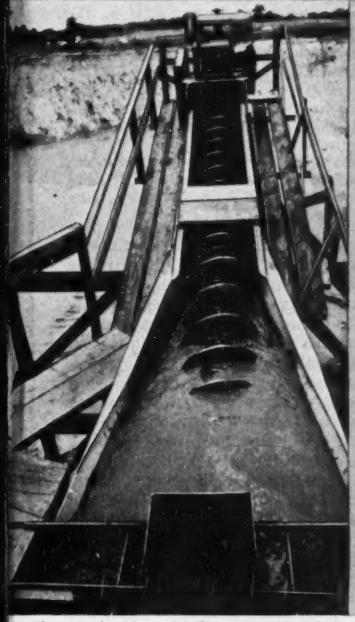

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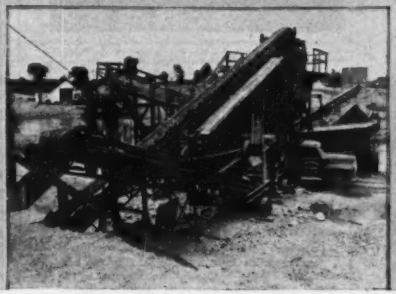

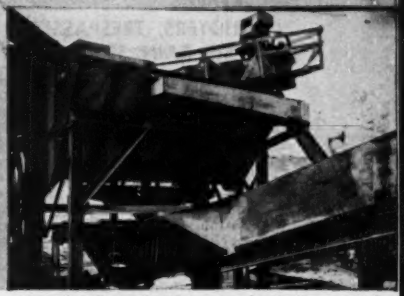

Close-up of screw washer for coarse material

Return conveyor provides closed-circuit operation

View of settling tank and screw washer for fine material

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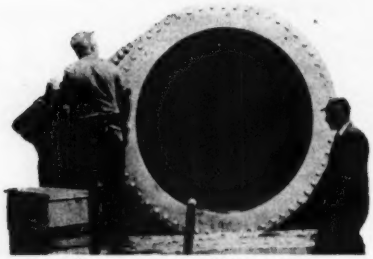

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(*Continued from page 144*)

various techniques that have been used. It also includes a brief discussion of factors affecting the relative cost of prestressed structures compared with other types of construction. Chapter 2 deals with the physical properties of materials that are important in prestressing. Chapter 3 covers design theory. And the last chapter discusses some of the outstanding prestressed structures that have been built to date by the various methods advocated here and abroad.

Again, the book is a valuable addition to the literature on a new and promising method of structural expression. If criticisms of details of the book arise, they will probably be focused on the design theory chapter in which the author leans heavily on formulas. Because the symbols used, though established "by international agreement," are unfamiliar and somewhat complicated by multiple subscripts, American designers may wish for a more simplified procedure. But this is a quality of the book that can be remedied in future editions.

In the meantime, and in view of the present stage of development of prestressed concrete in the U.S., the book should be of great value for all those who wish to become familiar with this new technique.

Water for industry

WATER TREATMENT FOR INDUSTRIAL AND OTHER USES—By Eskel Nordell. 513 pp. Reinhold Publishing Corp., New York 36, N. Y. $12.

Very often what makes one professor more effective than others is the way he interjects informative personal experiences and a bit of personality into his lectures. That same effectiveness has been achieved in this text. The author has enriched what was already a wealth of information with scores of examples, explanations and asides reflecting 32 years spent in the field of water treatment—and revealing an appreciative sense of humor.

Comprehensiveness and clarity make this reference on industrial water a useful text for a great variety of people. It presupposes no detailed reader knowledge of chemistry but describes simply and fully the fundamentals of industrial-water treatment problems and processes. Thus it fills its claim as a text for use by all from student and operator to consultant and industrial executive.

Water for drinking and water for industry generally are widely different

products. For some industrial purposes, certain components of water that are perfectly safe to drink become dangerous impurities. Dissolved mineral matter and dissolved gases join turbidity, color, tastes, odors and micro-organisms on the objectionable impurity list of industrial waters for many purposes. But boiler feed and cooling waters also are widely different products. Processes and equipment for treating water for many industrial uses and for removal of the full list of impurities are described.

Water quality requirements for a representative group of industries are discussed in some detail and a 7-page A to Z list of industries is presented with the types of water conditioning equipment they use checked off for each. Also tabulated are figures for impurities measured at stated points on 98 of the nation's more important rivers, plus some illustrative well water analyses.

Reports and Pamphlets

CONCRETE MASONRY HANDBOOK — By Portland Association, 33 West Grand Ave., Chicago 10, Ill.

SUMMARY REPORT ON WATER POLLUTION —No. 8, Western Gulf Drainage Basin; No. 12, Ohio River Drainage Basin; No. 13, Southeast Drainage Basin; No. 14, Western Great Lakes Drainage Basin; No. 15, Upper Mississippi Drainage Basin; No. 16, Southwest-Lower Mississippi Drainage Basin. By Public Health Service, Federal Security Agency, Washington 25, D. C.

CONCRETE CRACKING—By L. Boyd Mercer. Reprinted from "Commonwealth Engineer". Ready Mixed Concrete, 401 Collins St., Melbourne C. 1, Australia.

FIRE TESTS OF GUNITE SLABS AND PARTITIONS—National Bureau of Standards, Building Materials And Structures Report 131. Supt. of Documents, Washington 25, D. C. 25¢.

1951 SUPPLEMENT TO ASTM STANDARDS —Part 3, Cement, Concrete, Ceramics, Thermal Insulation, Road Materials, Waterproofing, Soils. By American Society For Testing Materials, 1916 Race St., Philadelphia, Pa. $3.50.

CHANGES IN CHARACTERISTICS OF PORTLAND CEMENT AS EXHIBITED BY LABORATORY TESTS OVER THE PERIOD 1904-1950—Special Technical Publication No. 127. American Society For Testing Materials, 1916 Race St., Philadelphia 3, Pa. $1.00.

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EDITORIALS

Earthquakes and bombs

AGREEMENT AMONG THE EXPERTS that there is close similarity between the design requirements for bomb-blast resistance and earthquake resistance increases the significance of the behavior of structures in earthquakes. The strong California quake of July 21 should therefore not be relegated to the record books without noting its lessons, even though they are not new to engineers versed in seismic design.

One lesson that was reemphasized is that wood frame construction is suprisingly resistant to earth shocks and, therefore, relatively safe; 90% of the wood frame dwellings in the town of Tehachapi suffered no major structural damage.

Another lesson is that masonry structures are vulnerable to earthquake damage unless their several elements are skillfully and carefully tied together; buildings lacking proper lateral ties, but otherwise intended to be sound and substantial—as measured by the investment in them—suffered considerable damage in this recent quake as in all previous ones.

This lesson with respect to masonry buildings has not been completely learned even in California. There, despite recurrent reminders of the need for extra engineering and some extra materials, sporadic criticism of the cost of engineering earthquake safety into schools still occurs before legislative committees. Since the schools in the Tehachapi area that were designed in accordance with earthquake code requirements escaped all but minor plaster crack damage, such criticism is again refuted. But whether it is completely silenced remains to be seen.

The lesson here is that engineers outside of earthquake areas must face up to the fact that it is not going to be easy to convince building owners to spend the extra money required to give their structures resistance to lateral forces. If bomb blasts, however, are deemed to be a real threat, such resistance is going to be very desirable: A big job of education lies ahead for structures in our vulnerable cities.

More water for Arizona?

THE MYTHICAL ENGINEER from Mars, who knows little about the significance of state lines and less about interstate jealousies, would never conclude that Colorado River water should be pumped at great cost into central Arizona to irrigate land there so long as it can be delivered at much less cost to fertile lands in Southern California's Imperial Valley. But that abstract economic conclusion does not for a moment deter the people of Arizona from going right ahead with their efforts to get the Central Arizona project built. Up to now, those efforts have been centered on getting Congress to put up the money. Opponents—chiefly from California—have always succeeded in blocking such proposals of federal largess.

What gives special significance to Arizona's latest move is that it marks a complete change in strategy. Instead of seeking federal funds, the state now proposes to use state funds to build the key elements of the project. These are a large pumping plant on the Colorado River, a 240-mile aqueduct to take water from that plant to the irrigated areas in the central part of the state needing more water, and the big Bridge Canyon power plant on the Colorado above Lake Mead to supply power for pumping. Total cost of the project is estimated at more than $700 million.

Can a state like Arizona hope to find that much money? A few years ago the answer would have been a definite no, but with the growing interest of the banking fraternity in revenue bonds, a qualified answer has to be made. Also, the state would not need to raise all the money, as nearly half represents the cost of the Bridge Canyon project, which the Bureau of Reclamation would be glad to build for the opportunity of collecting the power revenues. In line with this idea the Secretary of the Interior recently approved the state's application for a right-of-way across public lands for the proposed aqueduct. Because California also is interested in Bridge Canyon as a new source of power, it would have difficulty in arguing that this part of the project should not be built with federal money. Hence, if Arizona can convince bankers that water-use charges will be sufficient to carry the aqueduct costs, funds for the aqueduct and pumping plant might be obtained from private sources.

In any event these recent developments have given the Central Arizona project a new lease on life.

Speeding doesn't pay

A FEW FATAL ACCIDENTS—one involving several vehicles and costing seven lives—have turned the spotlight of publicity on the New Jersey Turnpike. As the Turnpike Authority is convinced that most of the accidents are due to speeds in excess of the 60-mph limit, it is taking the only course that has reasonable assurance of success—increasing the number of patrol cars.

Such prompt action is to be commended in the interest of safety. It also ties in with the conclusion of thoughtful drivers that the time saved by traveling at speeds over 60 mph is seldom worth the price in higher gasoline consumption.

A turnpike's greatest contribution as a timesaver comes from eliminating a multitude of delays from traffic lights, vehicles coming in from side roads and the like; in other words, in permitting sustained speed. Bursts of high speed do not help appreciably and they do increase accidents. They don't pay.

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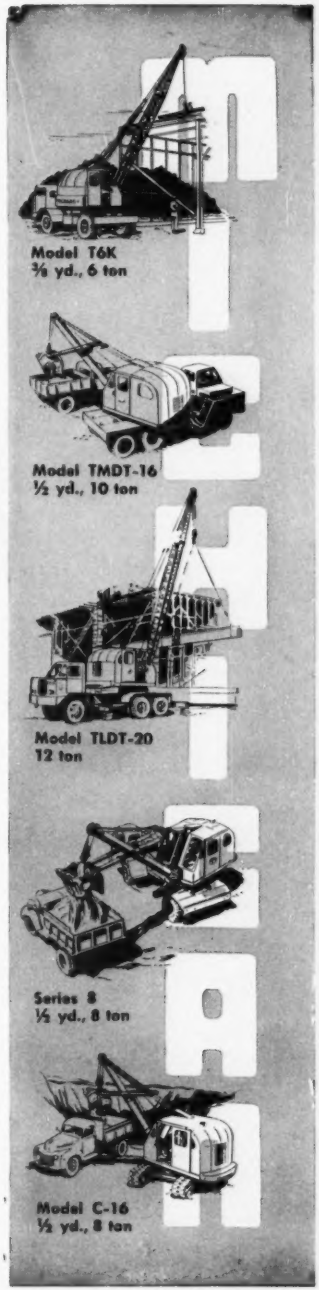

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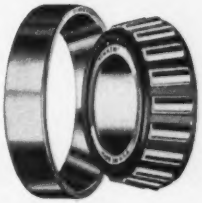

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